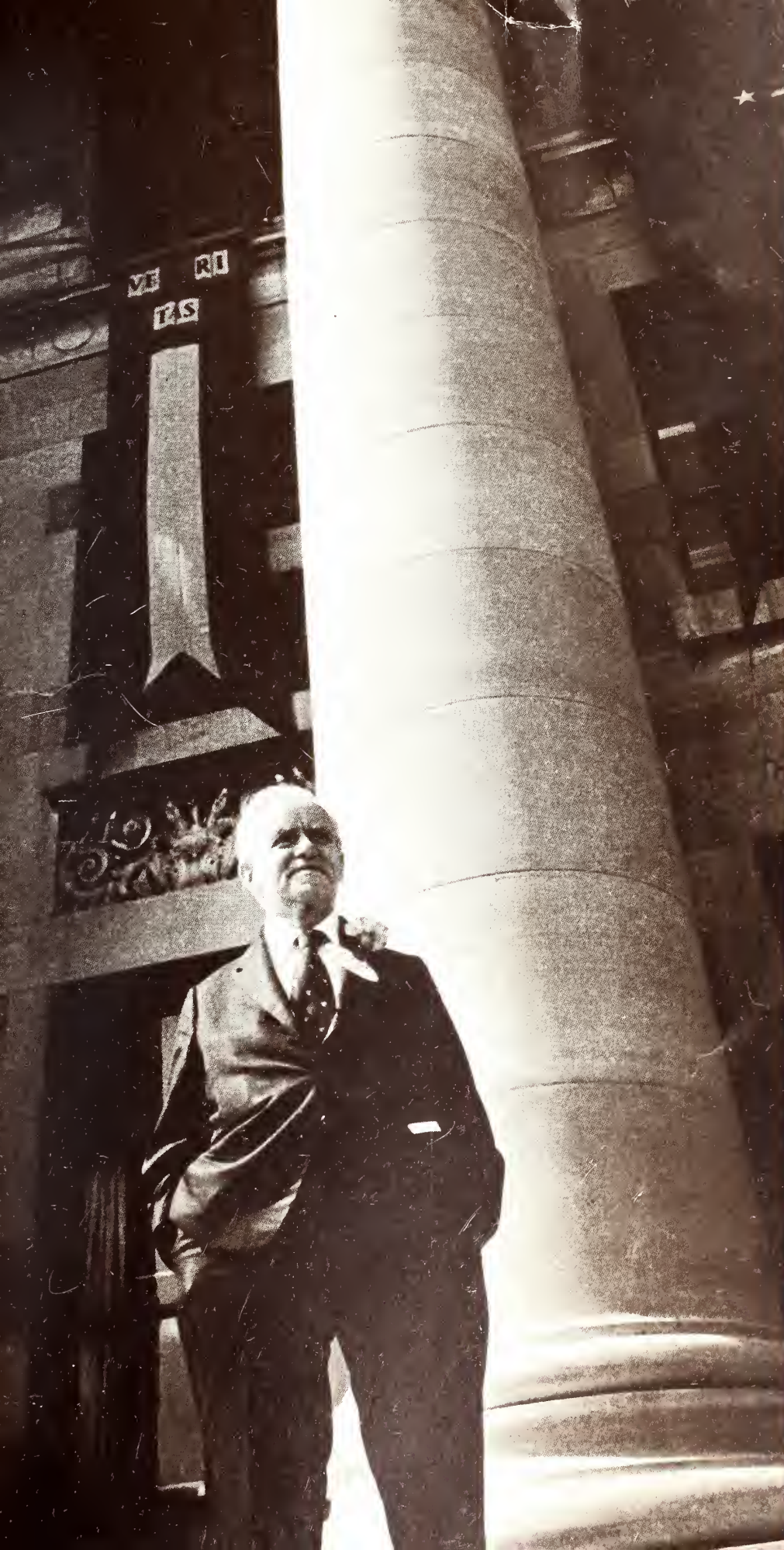


HARVARD MEDICAL ALUMNI bulletin

July/August 1971



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The negative power of anxiety.

This man thinks his next
quarrel may be his last.

For the hypertensive patient, severe symptoms may be intensified and aggravated by emotional overreaction to stress. Acutely aware of the adverse impact his emotions may have on the course of his life, the hypertensive patient's anxieties may be increased.

Adjunctive use of Libritabs may be of significant value in reducing excessive anxiety, which can induce adverse biochemical and physiological changes related to the vascular system and, by so doing, jeopardize management of the disease itself.

Libritabs (chlordiazepoxide) is used concomitantly with certain specific medications of other classes of drugs, such as cardiac glycosides, diuretics and antihypertensive agents, whenever anxiety is a significant component of the clinical profile.

Libritabs is especially well suited for extended use because of its wide margin of safety. In general use, the most common side effects reported have been drowsiness, ataxia and confusion, particularly in the elderly and debilitated. (See full prescribing information.) Moreover, the antianxiety benefits of Libritabs are generally maintained without diminution of effect or need for increase in dosage. When treatment is prolonged, periodic blood counts and liver function tests are advisable.

Libritabs (chlordiazepoxide) permits flexible, individualized therapy through its three oral dosage strengths.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Indicated when anxiety, tension and apprehension are significant components of the clinical profile.

Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmaco-

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logic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances, syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

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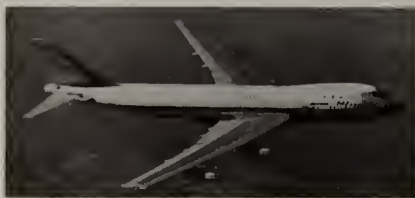
This unique program of tours is offered to alumni of Harvard, Yale, Princeton, M.I.T., Cornell, Columbia, Dartmouth, and the Univ. of Pennsylvania and their families. The tours are based on special reduced air fares which offer savings of hundreds of dollars on air travel. The tour to India, for example, is based on a special fare, available only to groups and only in conjunction with a tour, which is almost \$400 less than the regular air fare. Special rates have also been obtained from hotels and sightseeing companies. Air travel is on regularly scheduled jet flights of major airlines.

The tour program covers four areas where those who might otherwise prefer to travel independently will find it advantageous to travel with a group. The itineraries have been carefully constructed to combine the freedom of individual travel with the convenience and saving of group travel. There is an avoidance of regimentation and an emphasis on leisure time, while a comprehensive program of sightseeing ensures a visit to all major points of interest. Hotel reservations are made as much as a year and a half in advance to ensure the finest in accommodations.

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30 DAYS \$1739

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EPIDAUROS, IZMIR (Smyrna) the BOSPORUS and DARDENELLES. The cruise through the beautiful waters of the Aegean will visit such famous islands as CRETE with the Palace of Knossos; RHODES, noted for its great Crusader castles; the windmills of picturesque MYKONOS; the sacred island of DELOS; and the charming islands of PATMOS and HYDRA. Total cost is \$1299 from New York. Departures in April, May, July, August, September and October, 1971.

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GEORGE S. RICHARDSON '46
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Managing Editor

LYN LEVY
Assistant Editor

MILTON C. PAIGE, JR.
Advertising Consultant

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COVER: Pictured against the pillars of
Building A is Maxwell Finland
'26, new president of the Harvard
Medical Alumni Association.

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PERRY J. CULVER '41
Director of Alumni Relations

*The opinions of contributors to the Bulletin do not
necessarily reflect those of the Editorial Staff.*

THE INDIVIDUALITY OF MAN IN HEALTH AND IN DISEASE

by PAUL D. WHITE '11

WHEN I was a second year medical student beginning clinical medicine, our professor, Henry Christian, like our textbooks, told us what to expect in the way of symptoms, physical signs, and laboratory tests in the various diseases under consideration. We learned what the prognosis was likely to be and what the treatment should be, including the dosage of medicines according to body size and age. This procedure may or may not have been the best way to introduce us to patients, but fortunately, two other professors of internal medicine, Richard Cabot and David Edsall, during the next few years, told us of the many exceptions to all the rules that we had learned the year before, which had applied to extremely few at the midpoint of expected symptoms, signs, laboratory findings, prognosis, and response to treatment.

A rough estimate of exceptions far beyond the expected for all the categories of diagnosis and treatment might, on a guess from my many years of practice, be put at 75 percent or more on both sides of the midline. Although it was doubtless helpful in my initiation into practice to have had the two different viewpoints from these three professors, all the details came later from the fascinating experience of dealing with thousands and thousands of individuals individually. I daresay, also, that my medical classmates and I were luckier than many others in having had these outstanding teachers.

Let me first discuss the individuality of man in health. Many errors have been made and many healthy people have been made unhappy by overdiagnosis of disease. They have been thereby restricted because of the failure, even at times by physi-

cians, to recognize the wide range of the normal. I was so disturbed about this that I added a new first chapter to the third edition of my textbook, *Heart Disease*, published in 1944, and I referred to it in a paper on "Errors in Diagnosis and Treatment" in 1936, in a book on *Clues* in 1955, and frequently in addresses throughout the years.

During World War II many perfectly healthy young men were turned down for military service because their heart rates were "too slow" or "too fast," their blood pressure "too high" or "too low," their heart size and shape "abnormal," and their electrocardiogram "unusual." From actual testing, I know that the heart rates of perfectly healthy champion athletes, in perfect condition and at physical rest, can range from 38 to 118 (the former was McMitchell, the famous miler, the so-called American Mercury; the latter, a young man about to win an annual Boston Marathon with ease). His heart rate was ten beats slower at the end of the race. The blood pressure can also range widely, even in the same individual during 24 hours; from — say — 110 systolic and 70 diastolic on first awakening, to 140 or more systolic and 90 diastolic in the midst of a busy day. There are also some hyperreactors who do not become hypertensive. In 1941 I helped one such hyperreactor to get into military service, and throughout the next 29 years until he reached the age of retirement, his pressure was always up when he faced the military examiner at his annual check-up, but was always normal when he reported to me a few weeks or months later. After he retired I measured his heart size by orthodiagram and found it small which would never have been

the case had he had constant and severe hypertension for all those years.

Errors in the estimation of heart size are still common. I have encountered many normal, but short mesomorphs with horizontal heart positions and often a triangle of fat at the apex, whose chest x-ray film indicated cardiac enlargement. This could have been avoided had careful fluoroscopy been carried out.

The electrocardiogram is subject to even more errors of interpretation. Actually it is as individual as the fingerprint. The range of the normal ECG has not yet been identified. Not only the P-R intervals and the electrical axes vary with the size of the heart and the body-build, but the sensitivity of the T waves can be acutely or chronically affected by various physiological and biochemical factors, as well as by enlargement of the cardiac chambers or myocardial infections, toxicity, ischemia, or infarction. Many of the physiological and biochemical factors are acute; therefore changes of ST segments and T waves are often temporary. We must recognize the effect of the proximity of the chest electrodes to the heart surface. There is increased amplitude of complexes in thin persons and a decrease in obese individuals or in those with distended lungs or fluid in the chest. In the case of the vertical heart in a long-chested individual, it may be necessary to move the electrodes to a lower position to avoid a diagnosis of heart disease due to the absence of R waves in Leads V₂ and V₃. Thus, careful appraisal of all possible factors in electrocardiographic interpretation is essential; and particularly now when the multiple effects of therapy must be differentiated from the effects of disease. I advise then, an electrocardiogram, chest x-ray, and serum cholesterol be done before an individual reaches 25 years. The results should be stored in the family archives for later comparison when needed.

I come now to the symptoms of disease, which literally means "discomfort." Many sensitive indi-

viduals can be uncomfortable with little objective evidence of disease in the ordinary sense. I have as many uncomfortable patients with little disease except for the symptoms of neurocirculatory asthenia, spasmophilia especially involving the esophagus and cardia, and anxiety, as I have patients with so-called organic or structural disease, some of whom are relatively insensitive with hardly any symptoms. I believe we should call these "functional" disorders — *diseases* — for certainly they are dis-eases to the patient and demand further research for their control.

THE individuality of sensitivity varies from 0 to 100 percent. This difference is what justifies the common cliché, "the patient is more important than his disease." I did not learn this in medical school or in my early hospital days. It only became evident after my first several hundred private patients.

I have spent considerable time with my patients building acquaintances that, in many cases, lasted for decades. This close doctor/patient relationship has resulted not only in the close cooperation of the patient in his treatment, but in abiding friendship. One great hardship of this kind of companionship is the sorrow that comes to me in the loss of these individuals by death. This becomes more common as we both grow older.

A word about stress, both physical and emotional. Here again, certain individuals are much more sensitive than others. In fact, the neurocirculatory asthenic patient was originally labelled by Lewis and others as having *effort* syndrome as well as anxiety. I can confirm this. It does little good for me to quote a definition of stress as follows: "stress is life and you had better enjoy it." Few sensitive individuals can look objectively at the effect of stress on themselves. Stress can be mitigated somewhat, the patient can become philosophical about it, or tranquilizing drugs can help in extreme instances. Many pa-



tients continue to feel stress throughout life, attempting to adjust themselves to it as they grow older. We still await a better antidote than any we possess today, although propranolol, a beta-adrenergic receptor blocking agent, has helped many of my patients.

Physical signs and laboratory tests offer a myriad of abnormal findings, as in the case of valvular heart disease, cardiac arrhythmia, congestive failure, or coronary atherosclerosis. We must judge each case individually. We must know the family history of diseases and of longevity, as well as the details of heart size, blood pressure, eye grounds, the peripheral circulation, and response to treatment. No two individuals with heart disease, or any other disease, are alike. Across-the-board rules are inadequate.

Finally we come to prognosis and treatment. These vary greatly not only according to age, degree of disease, adequacy of treatment and its effect, family history of resistance, and longevity, but also according to the personality and philosophy of the patient. I insert here a personal example of the individuality of the patient. One month after a very mild though definite coronary heart attack consisting of a few days of ischemia without infarction, I went

to Mexico City to give an important address. The risk was slight. I acted discreetly and the stimulus provided by my visit was great. I am sure that our historic, philosophical ancestors of ancient Greece would have approved.

Two of the most interesting individual variations concern the response to diet and salt, and to drugs. The old adage that "one man's meat is another man's poison" still holds, because we must take into consideration not only allergic reactions but personal tastes as well. Enjoyment of food is worth cultivating unless it has resulted in obesity.

A great surprise was my discovery of the variation of patient response to different medicines. One example is the foxglove leaf. Some patients become toxic with less than half the average dose, others require four times or more the daily dose with no toxic effect. Later in my career, I began to read the works of the great masters of the past. I came across passages from William Withering published nearly 200 years ago, confirming experiences of his contemporaries regarding varied individual reactions to drugs.

I conclude with one of the most important points of all — epidemiological and health statistics. In 1948 I was invited to be executive director of the National Advisory Heart Council of the U.S. Public Health Service and chairman of the Research Committee of the International Society of Cardiology. To carry out these functions I retired as clinical professor at Harvard and chief of the Heart Unit at the Massachusetts General Hospital. I have taken part in cardiovascular, epidemiological investigations with international teams in various parts of the world, and have continued my private practice for 50 years. Both public health and private practice fascinate me because I have been able to see the individual (or tree) in light of the multitude (the forest). Few individuals belong to the average. It is the exceptions that help me enormously in my efforts to prevent disease.

DURING the past 50 years, some great advances in the theory and practice of physic have originated at the Harvard Medical School, and these and all others have been reflected in her transmission of new knowledge. In 1921 the well-established preclinical departments carried the principal responsibility of transmitting to medical students some understanding of the scientific basis of phenomena of relatively limited clinical application. Medical therapeutic practice in 1921 was little better than a decade earlier when, according to Richard Cabot, there were only 12 drugs of established potency. It is embarrassing to admit that only three of these — diphtheria antitoxin, dessicated thyroid, and salvarsan — were the result of firsthand discoveries by physicians. In addition to the dozen reliable remedies, there were many liquid formulations in use, but their only merits were that they produced no adverse side effects and contained a certain amount of alcohol.

Such was the therapeutic situation in the practice of physic in the outside world of Boston. Harvard's teaching hospital medical services were somewhat more advanced in theory. By the time members of the Class of 1921 began their clinical experience after the ordeal by blood, urine, and stool in the second year, third year students were working in outpatient clinics and fourth year students were on the medical wards of the major affiliated hospitals. To us, the Brigham was notorious for the precision and length of the medical records required by its chief of medicine, Henry Christian. At the Massachusetts General, David Edsall, who had brought fourth year students onto the wards as clerks, was gradually adding a few young, full-time teachers to a visiting staff composed of leading Boston practitioners. At the Boston City, where Edwin A. Locke was the senior Harvard appointee in medicine, the patients were really sick or had readily palpable livers; and at the Children's Hospital, John Morse insisted on a difference: Children were *not*

simply little men and women. The site of the future Beth Israel was a vacant lot.

With its several affiliated hospitals involved in clinical instruction, Harvard has long enjoyed the assurance that it would be unlikely that all would perform badly at the same time. Indeed, then and in later years, the friendly rivalry of these autonomous hospital departments of medicine has made membership on their clinical staffs a stimulating and congenial experience. Unusual patients on the medical service at one hospital were often seen in informal consultation by men with a related special interest at another. In some instances, ward patients were even transferred to another hospital for the benefit of special studies. Thus, Minot and Murphy's demonstration of the success of liver feeding in pernicious anemia and the subsequent development of potent liver extracts in collaboration with Edwin Cohn of the department of physical chemistry included patients at all three general hospitals, as well as at the Huntington Memorial. The success of these cooperative efforts was the result of the personal friendships and active intellectual interests of the various chiefs of medicine, fostered also by their monthly meetings as an Executive Committee, of which, by definition, no hospital chief could be chairman.

The full-time system that was initiated by Dean Edsall continued to develop under Dean Burwell with a wise selection of young men for full-time appointments in medicine, often after a period of training in a preclinical discipline at Harvard or elsewhere. The hospital chiefs of medicine welcomed and encouraged this new kind of young doctor, who

A GLANCE AT 50 YEARS of CLINICAL MEDICINE

by WILLIAM B. CASTLE '21

was capable of using the tools of preclinical science in his study of patients, and of bringing to his teaching of medical students and house staff a better understanding of the pathologic physiology or pathologic biochemistry of the patients. Fortunately, this development has continued in close and complementary association with so-called part-time physicians who possess an indispensable fund of clinical experience.

The Golden Age of Clinical Investigation began dramatically in 1922 with the discovery of insulin in Toronto. The following year, this discovery, in the hands of Elliott Joslin, saved George Minot's life. In Boston, clinical investigation was fostered by the development of the full-time system just mentioned. Moreover, it was recognized that if scientific objectivity was to be achieved, special accommodations, including beds and adjacent laboratories, were needed for the controlled study of patients and their comfort meanwhile. Based on the prototype of the metabolism ward at Bellevue Hospital in New York, clinical facilities were completed at the Thorndike Laboratory of the City Hospital in 1923 and, in addition to existing scattered laboratories, as Ward 4 of the Massachusetts General Hospital in 1924. The Thorndike Laboratory, of which Francis Peabody was the first director, provided the nucleus of the development of Harvard full-time clinical medicine at the City Hospital. Laboratories less specifically designed for clinical studies already existed at the Brigham.

In 1928 Hermann Blumgart left the Thorndike to become Harvard's first full-time professorial appointee

at the new Beth Israel Hospital, of which the elder Linenthal was then chief of medicine. At about the same time, Joseph Wearn left the Thorndike to become professor of medicine at Western Reserve and later dean, an appointment that subsequently led to profound effects upon the design of American medical education. These successful transplantations were only the first of literally scores of others derived from the medical departments of various Boston hospitals. Many of these men and women became leaders in academic medicine in all parts of the nation. Thus, Harvard's major affiliated hospitals have been an important seed-bed for the luxuriant growth of full-time academic medicine that took place in this country, especially after World War II, when the number of full-time members of medical school faculties increased from 3,993 in 1950 to 17,149 in 1965.

THERE is insufficient time to present more than the highlights of 50 years of extensive research in clinical medicine at Harvard. Howard Means has noted that, in contrast to members of preclinical departments, those given the privilege of direct and continuous professional contacts with patients should "beware of inordinate preoccupation with cells, molecules, and atoms. The whole organism is still our major problem." This especially difficult kind of research, termed basic by Donald Seldin because of its great explanatory and predictive power with regard to the patient has, with certain rewarding exceptions, been the usual concern of most investigators in the clinical departments of medicine at Harvard.

I have selected the following examples from an array of significant contributions. I apologize for many inevitable omissions, especially of recent date. The Beth Israel is noted for postmortem injections of the coronary vessels with radiopaque material, studies of venous throm-

bosis, the employment of radioactive iodine in the treatment of intractable angina, and in the analysis of thyroid pathophysiology. There, the pioneer use of externally applied voltages first opened up the subject of cardioversion. The Brigham stands out in extensive studies of the adrenal cortex, of cardiovascular dynamics in pregnancy and in disease, of medical spectroscopy, and notably the birth of organ transplantation in man as a result of a collaborative endeavor between medicine and surgery. The first use of radium in the treatment of hyperthyroidism and the exploration of calcium metabolism and its endocrine controls, together with basic studies of joint diseases and of renal function took place at the Massachusetts General. The City Hospital is cited for the first use of a radioisotope for a physiological measurement, extensive studies of the pathophysiology of pernicious and hemolytic anemias, and a saga of therapy of infections. Diseases of the heart, liver, kidney and thyroid were not neglected. Saving newborn infants with erythroblastosis and electrolyte disorders, studies of the genetics and somatic expression of congenital disease in children, including

anomalies of plasma globulins; and last but not least epochal pioneer events in the chemotherapy of acute leukemia occurred at Children's Hospital. These are some of the medical contributions of clinical investigators at Harvard's affiliated hospitals.

After the war, the nation's medical faculties were relaxing from the strenuous exertions of the accelerated teaching program, confident in the property of their discipline-oriented scholarship when a cloud, no larger than a man's hand, appeared in the serene skies of medical academia. Distant thunder was heard when returning graduates of the Western Reserve Medical School complained that they had found their medical education lacking in what today is called "relevance" to their clinical activities in military service and in medical practice. Then it rained for 40 days and 40 nights in Cleveland while the faculty rigorously examined its teaching methods. This was presided over by a former member of Harvard's department of medicine, Hale Ham, who had been given that special assignment by Dean Joseph Wearn. Once raised, the question of relevance haunted other faculties suckled in the ancient creed of Flexner. At Harvard there had been, even in the days of HMS '21, a fallow field between the departmental bastions of the basic sciences and the proprietary domains of the hospital departments. This was the curricular territory of the twin courses in the latter half of the second year called Laboratory Medicine and Physical Diagnosis. These served as categorical approaches short of the whole patient. Understandably, it was in this unfenced domain that Harvard began formally coordinated instruction, in which representatives of preclinical and clinical departments contributed to the presentations. During successive blocks of time, the pathophysiology relative to particular organ systems was revealed to the second-year students. Because a committee designed the original format of the course, the frontispiece of its



syllabus was appropriately a drawing of a camel. At present this lively type of instruction occupies much of the second half of the first year, as well as the first half of the second.

Here then, began our own modern revolution in medical teaching. Like the earlier national cause, the idea of curricular reform found its ardent patriots and its stodgy Tories, its committees of correspondence and its faculty congress. From the ranks of faculty, leaders appeared who spoke with resolution and authority on matters educational and outlined their strategy with diagrams and charts. Since 1966 curricular change has succeeded curricular change. The latest curriculum consists of four basic parts; Cell Biology, Human Biology, Clinical Clerkships, and Electives. There are 17 months of electives, which occupy much of the fourth year, and 25 months of required courses. Nowhere in the grand design does that

arcane word "medicine," presumably suggestive of a trade-school attitude, appear. Preclinical departmental hegemony has given way before the victorious march of correlated communism, the ABCD and (lower the voice) E's of tested student scholarship have become the binary notation of "pass — fail."

In 1921, except for home-based obstetrical deliveries by students and the outlook of hospital departments of social service, the efforts to provide medical care did not extend beyond the out patient department. There is insufficient time to comment upon the larger gratifyingly present concern of faculty and students that the medical school may somehow retain a sufficient and relevant scientific basis for the education of students, while at the same time preparing them to contribute to extended health services for the public. This will surely be expected of graduates who will be educated

to an ever-increasing extent at government expense. Let us not forget, however, as well-intentioned members of the medical profession, what experience has already shown: better health for the nation's underprivileged requires that they receive from society better food, housing, and economic opportunity no less than better access to medical care.

A member of the graduating class of 50 years ago is understandably alarmed by the bigness of modern things and by the personal anonymity created by the numbers of people involved. In his day the faculty roster stood at 82; today it numbers 908. On this occasion he can only mention progress without comment upon its direction, but he may properly express his optimistic belief that the quality of Harvard's medical students and faculty being what it is today, the Medical School will continue "calm rising through change and through storm."

THE CITIZEN, CHEMICALS, AND CONTROLS

by HERBERT L. LEY '46

WE are standing on the brink of a period of change in the regulation of chemical materials like nothing we have ever witnessed. Those of you who may have been exposed to management courses sponsored by the American Management Association, the Civil Service Commission, I.B.M., or, for that matter, the Harvard Graduate School of Business Administration, will find nothing new in my thesis. It is a generally accepted fact that our store of knowledge, and in turn, changes in our patterns of living are expanding, not in arithmetic but in geometric progression. One need only look at two areas of communication to grasp the concept.

First, look at the technology of moving human thought from one person to another. In the dim past of

history, messages were conveyed by mouth, drum, or smoke signal. Somewhere, ages ago, messages were inscribed on clay, stone, and finally papyrus, in which forms they could be transported and stored. Only in the last thousand years came the invention of paper and the printing press, both of which contributed immeasurably to human communication. The past 150 years have brought us changes in human communication that surpass enormously all other changes from the beginning of human history to the mid-1800's. The development of the telegraph, telephone, radio, television, and now, satellites permit instantaneous communication almost anywhere in the world.

Second, look at the technology of moving human beings from place to

place. Without going into detail, human transportation was based on human muscles, domesticated animals, or the wind until about 200 years ago. Following the steam engine came the electric and the internal combustion engines. Within the past 70 years, aircraft has grown from an idea in the minds of three persons, the two Wrights and Langley, to a multibillion dollar industry that is capable of transporting passengers half-way around the world in less than a day. Within the past ten years we have witnessed what may be the ultimate in transportation; spaceflight, which inevitably will have tremendous impact upon human life, and probably sooner than we dream. Set against the backdrop of all recorded history, the changes in transportation since Watt's in-

vention of the steam engine in 1769 completely dwarf the developments in the transportation field prior to that time.

The object of this introduction is to set the stage for my thesis that we are standing on the brink of momentous changes in the technology of control of chemical substances to which man is currently exposed. We should not expect it to be an evolutionary process, but one that will probably burst suddenly upon us.

What leads me to prognosticate a major upheaval in the control of environmental chemicals?

In 1946, when our class graduated, penicillin, DDT, and the cationic and anionic detergents were new chemicals, used for the first time to accomplish specific objectives for the benefit of mankind. Our societal experience with the use of such materials was exceedingly limited, and, as might be anticipated, our judgment of their overall value was an enthusiastic acceptance of their worth, without a serious attempt to look for potential problems associated with their widespread use. Who among us had the foresight to see the complication of widespread resistance of microorganisms to penicillin, the potential for environmental concentration of DDT and related long-acting pesticides, or the practical problems of sewage plant operation and waterway contamination with the synthetic detergents?

These kinds of "side effects" have become commonplace and have been widely publicized over the past ten years, beginning with the thalidomide episode in the drug field and extending more recently to herbicides, detergents, and artificial sweeteners. The media has brought many of these issues into our homes, sometimes before the necessary scientific facts have been collected, and have, on occasion, precipitated reflex regulatory actions by government that may or may not have been sound. The point is, that whether we like it or not, the citizenry of this country is involved in issues that are basically scientific. On the other hand,

some scientists and politicians in our country are attempting to resolve issues in which the citizenry does not have a sufficiently prominent voice.

I should like to use the drug and the food additive areas to illustrate my points.

PROBLEM:

HOW DO WE ARRIVE AT SOCIETAL JUDGMENTS REGARDING THE ACCEPTABLE SPECTRUM OF USE OF PRESCRIPTION DRUGS?

A month ago — May 3, 1971, to be exact — the *Washington Post* carried a prominent article with the headline: "Rosenthal Assails FDA on Highly Toxic Drug." Congressman Rosenthal's response had been stimulated by an editorial in the April 13, 1970, issue of the *Journal of the American Medical Association*, which attributed the deaths of 15 persons to Methotrexate given for the treatment of psoriasis. Methotrexate is a highly toxic drug, an antimetabolite, first marketed in 1959 as an aid in the treatment of neoplastic diseases. Since initial marketing, the drug was found, presumably by an accidental observation in a patient with concomitant neoplasia and psoriasis, to be effective in relieving the cosmetic signs of psoriasis. Because Methotrexate is available on the market, and because the Food, Drug and Cosmetic Act does not prohibit a physician's use of any drug for any purpose he chooses, provided that he prescribe the drug within his state of registration, there is moderately widespread use of Methotrexate for cosmetic relief of the psoriatic lesions. The significant question in such use is, do the cosmetic benefits of the drug warrant the risk associated with it? There are several cases in the courts based upon this question. We will watch their outcomes with interest.

By coincidence I noted in the review of this topic another article in the JAMA, this one in the February 8, 1971 issue, titled: "New Methotrexate Schedule Aids Psoriatics." This investigational study is focused upon a highly selective schedule of

administration of Methotrexate at the specific times the psoriatic cells are dividing. It is possible that an approach such as this may, in time, provide a treatment procedure for use of Methotrexate in psoriasis without significant risk. Such investigations are highly proper in development of new information, provided that the patients involved are informed of the risks and give their consent to the use of the drug.

The Methotrexate-psoriasis problem is more than an isolated example of a situation which, with the assistance of the media, can grow to proportions of major concern. The *Washington Post* article quotes Congressman Rosenthal as charging that the Food and Drug Administration (FDA) has been "seriously derelict" in trying to dissuade dermatologists from prescribing Methotrexate for psoriasis. Although I personally agree with Congressman Rosenthal that the indications for the use of Methotrexate in psoriasis are extremely limited at this time, I cannot agree with him that it is the FDA's responsibility to regulate the practice of medicine by dermatologists. In my opinion, the practice of medicine must be regulated by the profession, and far more effectively than it is now, if our profession is to survive without excessive government controls.

A closer look at the characters in the Methotrexate drama will define the responsibility of each. First there is the manufacturer, who places the drug on the market with specific recommendations for use. These recommendations have been developed jointly with the FDA, which has reviewed the clinical data provided by the firm and passed judgment on the safety and efficacy of the drug. The FDA's responsibility is limited to insuring that there are sufficient data to conclude that the drug is safe and effective under the conditions of use proposed by the manufacturer. The physicians of this country are free to read the labeling of the drug, i.e., the Physicians' Desk Reference or the material supplied by the firm or its de-

tail men, and then to prescribe the drug as they see fit. It is the physician's individual responsibility to insure that the benefit that the patient will receive from the drug outweighs the possible risks. With Methotrexate there appears to be some question whether the risks associated with its use in a non-neoplastic disease may, indeed, exceed its benefit. Who should make that judgment?

THE focus of the problem is: How do we arrive at societal judgments regarding the acceptable spectrum of use of prescription drugs? At present, such judgments are made through malpractice suits, which, I maintain, are poor tools to use in resolving medical issues, if only because of the possibility of verdicts reached through emotionalism.

Is it not time that we, as a profession, recognize that the complexity and toxicity of the drugs available for prescription use are so great that we should recommend that certain drugs should only be used by physicians having special training or preparation for their use? Is it not time for the American Medical Association or a not-yet-created National Academy of Medicine to establish a "Supreme Court of Medical Practice" which will define certain limitations in the area of practice permitted to individual physicians based upon their training?

Admittedly, the thought will be repugnant to many, but I for one have long accepted the concept that it would be unwise to have an abdominal surgeon perform neurosurgery on a member of my family except in the most extreme emergency. Fortunately surgeons must utilize operating rooms, and operating room privileges are rather well regulated by professional peer committees, so I am not likely to face this hypothetical problem. Unfortunately, there is no comparable mechanism to provide professional peer regulation of prescribing practices in this country, despite the fact that few gastroenterologists would be ap-

propriately prepared to treat leukemic meningitis with Methotrexate. I am deeply concerned that unless the profession develops such a mechanism for itself, it will, in the near future, be faced with the imposition of conceivably harsher restrictions developed by non-medical groups under the pressure of some crisis picked up and ballooned out of proportion by public hysteria, *à la* thalidomide. In terms of prescription drugs, the physicians of this country are responsible for the establishment of sound controls. The general public is not equipped to make such judgments.

With over-the-counter drugs and food additives the lay public should be involved in the development of sound controls. This leads me into my second topic.

PROBLEM:

HOW DO WE ARRIVE AT SOCIETAL JUDGMENTS REGARDING THE ACCEPTABLE SPECTRUM OF USE OF FOOD ADDITIVES?

The text for this topic comes from the *Wall Street Journal* of April 7, 1971, in an article headed: "Sharp Restrictions on Use of Saccharin Urged by Scientist; Cyclamate Ban Cited." The message of that article was that animal testing of saccharin by implantation of a pellet of cholesterol and saccharin in the bladder produced bladder tumors, just as did cyclamate. The article also implies (incorrectly) that the cyclamate ban was the direct result of the highly artificial bladder implantation test.

My purpose here is not to look at the specific issue of cyclamate or of saccharin, but rather to examine broadly the whole issue of the safety of sweeteners. At the present time, the main sweetening agents are sucrose, a few hexoses, saccharin, and cyclamate. Cyclamate was banned nearly two years ago on the basis of animal feeding tests that produced bladder carcinomas. That left sucrose, the hexoses, and saccharin. Saccharin has an interesting history. During Theodore Roosevelt's presidency, Dr. Harvey Wiley, then the Commissioner of FDA, attempted to

remove saccharin from the nation's food supply. Wiley's effort is alleged to have led to his dismissal as a result of Roosevelt's displeasure. Be that as it may, we have today one major caloric sweetener, sucrose, and one non-caloric sweetener, saccharin. The hexoses have never found favor. Some people today seek to ban saccharin, leaving, for all practical purposes, only sucrose as a sweetening agent.

I am convinced it is now time to look carefully at all risks associated with each of the two remaining sweetening agents. Although sucrose has been used in small amounts for a considerable time, it is only in the last century that it has been available at reasonable cost in almost unlimited quantities. There are those in the medical community, and some here in Boston, who have questioned the "safety" of sucrose consumed at the levels now characteristic of the American diet. Yet, should saccharin fall under the cloud of potential hazard because of animal tests demonstrating carcinogenicity of one sort or another, the only alternative for sweetening purposes at this time would be sucrose. Would it be less hazardous to the public health to permit continued marketing of saccharin, and thereby reduce consumption of sucrose, than it would be to ban saccharin from the market and force the use of sucrose for all sweetening purposes?

I have no answer to this question. We have only fragmentary information on the effects of high sucrose consumption on cardiovascular disease and other pertinent pathologies, so an answer will be difficult. I ask this unanswerable question to pose a hypothetical dilemma: Assuming that one or more animal toxicology tests of saccharin reveal pathology, neoplasia, or otherwise, is it in the public interest to remove saccharin from the market or to limit its ingestion by man, on a milligram per kilogram basis, to 1/100, 1/1,000, or some other small fraction of the amount required to produce pathology in animals?

There are consumer activist

groups who will argue that regardless of the alternatives, saccharin should be removed from the market if there is the slightest doubt of its total and complete "safety." I doubt whether they have seriously considered the present alternatives.

Another example of a dilemma is at this moment purely speculative, but nevertheless of interest. There are several antioxidant agents currently accepted as safe which are widely used in a variety of foods to prevent oils from becoming rancid during distribution. A brief review of the materials on your pantry shelves will demonstrate dramatically the widespread uses of the antioxidants (butylated hydroxyanisole, butylated hydroxytoluene, dilauryl thiopropionate, gum quaiac, propyl gallate and thiopropionic acid). The chemical nature of these materials is such that it may be predicted that most, if not all of them, will produce deleterious effects in some animal test system if high concentrations, above those in food use, are fed to animals. Should neoplasia occur, regardless of the concentration of antioxidant tested, the present law requires removal of the antioxidants from the food supply if the neoplasia were invasive, i.e., "cancer." Interestingly enough, this same group of chemicals protects against radiation injury at low concentration, and may therefore be protective against radiation-induced neoplasia. We would have then a hypothetical situation in which the present law would ban a chemical that was protective at low, and harmful at high, concentrations. Obviously the law is poor science.

Some of my contacts, knowledgeable in the use of these materials in foods, point out that if the antioxidants as a class were to be banned suddenly from the list of approved food additives, there would be both immediate and long-range problems. First, there would be an immediate problem of the availability of sufficient food for the population, because of the wide use of the materials in packaged foods. Second, there would be a long-range prob-



lem of consumer acceptance of foods produced without antioxidants because of rancidity developing while the food was being distributed. Unless the consumer could be induced to accept rancidity, nationwide distribution of certain products would no longer be feasible, and we might, as a country, have no alternative but to revert to the corner grocery store era. I'm not predicting this will happen; I'm merely raising a question.

If we are faced with alternatives as drastic as these two examples, a paraphrase of the old expression, "War is too important to leave to the generals," seems appropriate: Regulation of food additives is too important to leave solely to the scientists and consumer activists.

HOW then should we arrive at judgments regarding the acceptable spectrum of use of food additives? In my opinion, the American consumer has had far too little voice in decisions regarding food additives, decisions that potentially have major impact not only upon his health but also upon the nature and variety of foods available to him through conventional food distribution channels.

Under no circumstances would I condone the use of a food additive which has been shown by feeding tests in more than one animal species to produce pathology at levels comparable to those anticipated in the human diet. I support the establishment of a defined safety factor to insure that human consumption of the additive is held to a small fraction of the dose that produces pathology in animals. This is the practice currently employed by the FDA, which uses a factor of 1/100, except for materials classed as carcinogens for which the law requires total removal from the food supply. I strongly support the full toxicologic review of all food additives now on the so-called GRAS, or Generally Recognized As Safe, listing. I believe most of you would support such actions.

The critical question before this country today, remembering that the frenzied reaction caused by MSG and cyclamate could be repeated tomorrow for saccharin, antioxidants or caffeine, is: How can the decisions regarding the acceptability of food additives be made in a more deliberate atmosphere to include careful consideration of the availability and the potential hazards of alternatives to the additive in question?

Under regulations now proposed by FDA, it is possible that even our common spices, used for thousands of years, could fall under the restrictions of the Delaney Amendment. What if new animal toxicity tests reveal that some of our common spices and flavorings are carcinogenic in high doses? Would the American public be willing to accept the removal from the market of such items as basil, dill, ginger, or even heaven forbid, garlic and pepper?

It is time to involve the public in this sort of decision. I propose the establishment of a "Supreme Court of Food Additives," probably within the Department of Health, Education, and Welfare. This may seem heresy, but I am strongly tempted to limit its members to the lay public and limit the scientists and politi-

cians to the role of presenting evidence to the court.

This would be a drastic solution, but the problem is drastic. Unless the citizen becomes effectively involved in making his influence felt in such decisions, we are likely to find those decisions influenced deleteriously by political expediency, publicity value, or media pressures. The purpose of such decisions is to protect the citizen from unnecessary risks, and it is my belief that he should have a voice in deciding how much he wants to be protected, based on a general knowledge of the alternatives available if a particular chemical is removed from use.

We are standing on the brink of drastic change in the technology of chemical controls. Our knowledge of possible adverse effects of chemicals is growing at a rapid rate. We must

take responsible action in limiting the risks involved, but responsible action does not necessarily mean removing all chemicals from use until modern toxicologic tests can be performed on them, as some consumer activists suggest.

The present mechanisms of review of chemical hazards within government are hold-overs from the horse and buggy era, and are in need of overhaul. A number of you will be called upon to assist in that overhaul within the next decade. I urge you to remember that the object of your efforts is the protection of the citizen, and that the citizen has a right to participate in the judgment of how much protection he requires, or desires. I further urge you to give these problems your serious consideration now, because tomorrow will be here very soon.

It is the perception and response to these issues, together with the complexity of living in a university under acute challenge, that have made these four years rewarding for a novice in education. The decay of the city and its schools, racial preceptions and problems, the draft and the war, cultural despair spawned in suburban affluence, the financing of higher education, and ultimately, the question of the validity of learning, are the issues that frame the job.

People often ask does Harvard College take mostly private or public school people? What is the ratio? Those questions long since have become an anachronism. The real questions are whether or not disadvantaged or advantaged students come to Harvard and in what mixture? In this country, the gap between the advantaged and the disadvantaged has been widening, not narrowing. In the last ten years we have been seen new students and new classifications of students come to our colleges. One group can be classified crudely as those people who come academically rich but poor in life experiences. Simultaneously we have those who are rich in life experiences but comparatively underprepared academically in spite of high potential. And a third category of student, which I suspect is the most precious of all, is the happy young man or woman who is balanced in intellectual and psychic development and simply grows quietly in his or her own way.

The colleges were not prepared in practice to take on students with this much difference in background. To avoid this tension would be to deny one's college either the proficiency of the well trained, or the unique and hungry potential of the exceptional from poor environments and poor schools. I am still not sure if we have come to grips with the opportunities that have been created in colleges by the admission of these disparate groups. I am not speaking of so-called open admissions programs. Such programs may have an important role to

BACK ACROSS THE RIVER

by CHASE N. PETERSON '56

WHY would a doctor, happy in the practice and teaching of medicine, temporarily leave it to become a college dean? One day while examining a patient the telephone rang, and the outgoing Harvard College Dean of Admissions was on the line. I had never met him before, but he asked if I would be interested in being considered for his job. My initial response was, "No, of course not." I continued the call, however, in an adjacent examining room, returned a half hour later relieved that the patient I left was understanding, and went home that evening to ask my wife, "If you didn't want to live in Salt Lake City, where would you like to live?" She said, "Boston." We had met on Brattle Street and were engaged in Boston. The decision thereafter came slowly. But we could not think of any reason not to try it for a year or two.

The Dean of Admissions of Harvard College participates in the annual responsibility of constructing a

college undergraduate body. That responsibility has both immediate and long term challenges. Narrowly perceived, it has been a process of finding 1200 young men who bring excellence to Cambridge, who have the potential to enrich their own education, who can relate to each other and the faculty, and who have distinguishing features that allow us in good conscience to turn away six to seven thousand other able applicants. The job is difficult. We are obliged to satisfy our own standards, to live with real anguish — our own and others' — and at the same time gain and retain the confidence of our many constituencies — undergraduates, faculty, schools, applicants, alumni, and the country at large.

In the long term, however, the job places each member of a staff of 15 and the faculty committee of 25 uniquely at a narrows, at a pinch-point of society through which the urgent issues of our times must rush.



play in the large public educational systems. In California, and now in New York City, there are sufficient numbers to create a special college level for each level of preparation, from pre-college through junior college to traditional college. In a smaller college such as Harvard, with different responsibilities, the only students who can be admitted are those who are well prepared, or who have such outstanding potential that their relative weakness in certain areas of preparation can be expected to be essentially self-correctable within the first year.

We have all heard about the admission of black students into colleges, and students from other minorities. You have heard about it in the medical school. Are we indeed substituting one abhorrent kind of racism for another? Have we ceased bending over forward only to bend over backward? Or are the problems sufficiently urgent to justify bending over backward? I think there is an answer to these questions that does not require any distortion of posture, only a clarity of mind.

In the 1930's, President Conant set about making geographic changes in the constituency of Har-

vard College. He looked for people beyond New England and when he found outstanding applicants he rewarded them with National scholarships. In the 1950's, similar efforts were made, not geographically but socially and culturally, to the blue-collar white ethnic groups around the country. These efforts gained such notoriety that they created the impression that you could not come to Harvard unless you came from El Paso (certainly not Lexington, Massachusetts) and that you stood a better chance if your father left banking for plumbing. In fact, these were efforts of recruitment, not of selection, a distinction I will elaborate on in a moment. Five years ago, as our attention turned belatedly to the ignored minorities of this country we were well prepared to look for those students who, on a racial basis, were underrepresented in the college because they had been discouraged from applying. We recruited with racial characteristics in mind as we had earlier (and still do) with geographic or cultural characteristics in mind. This is recruitment, not selection. It is terribly important that efforts be made, without embarrassment or apology, to find peo-

ple who would not otherwise be spontaneously involved in the admissions process. Once the recruitment process is successful, then the selection process must admit only those people who are best prepared and best able to benefit from the college experience. The theory that surrounded the recruitment of students into the application pool must be stripped away so as to force each applicant to be judged individually not collectively. This requires firmness and patience, and every month for the past three years, I have had well meaning people come to me saying that Harvard needs a quota, we need a number, we need an assignment of a certain number of spaces for this and that good cause. People who make arguments for quotas, for whatever good or bad reason, ignore the fact that once quotas are established, you harmfully and irrevocably establish second class citizenship and special classes within a university. I think the same numeric success can be achieved and has been achieved with recruitment efforts, not with selection bias.

We are learning new things about the incorporation of cultural minorities within a student body. In the first three hundred years at Harvard there were always a few black students in each class. They were largely of middle class background, and their presence was easily accommodated in most cases because they themselves had made the adjustment to white society before they came to Cambridge, or did so rapidly after arriving. The words *accommodated* and *adjustment* are words of irony and unidirection as we understand them now. In the middle 1960's, the number of black students increased to the point that such students could stay "black" if they chose. No longer had color to be washed away on entrance to college. But the number had not become large enough to allow those students to relax or to be other than black. We went through a period of some anguish characterized by exaggerated and narrow identity. I think we

are through that phase. Black students are now applying and being accepted in sufficient numbers so that pluralism, the notion that has characterized Harvard in other aspects of education, now can be applied to them as well. Let a man be black, let a man be a singer, let a man be a writer, let a man be whatever he wants. The numbers of black students are now large enough so that each student can free himself of the tyranny of having to hold a single identity. What is said for men is applicable to women as well.

The draft has posed a special problem to colleges. For the first time people began to go to college because it was a way to avoid the draft. Who knows what the motives were in any individual? I suspect that many students didn't know themselves. Is one a hero by accepting the call to the draft, or by rejecting the call of the draft? Which is the greater expression of courage? Consider also the faculty. They have traditionally protected students. Walls were built around colleges and universities to protect the students from outside influences while they learned and matured. The faculty could not protect their students from the draft. Whether or not students should be protected is not the issue. But the faculty's inability to protect students has placed upon them a unique sense of guilt compounded by the war itself. Guilt as a motivation complicated the role of faculty in the issues colleges faced over the last three years.

CAN students, their families, or colleges pay the rising costs of education? In the last five years, we found and provided scholarship support to larger numbers of students from poor backgrounds. College expenses are rising rapidly at the same time that sources of scholarship are drying up — federal, state, and private. We face the prospect of having to withdraw support from just those people who were the last to be offered it. Will they indeed be the first ones to be cut back? If they

are, this will confirm the suspicions and paranoia of the poor communities around this country. Will we return to the urban turmoil of 1966 and 1967? At the same time, do we lack the wisdom to presume that we should or could deny scholarship support to middle class people or the blue collar whites? Could we tolerate, even apart from the immorality of the action, turning our colleges into bipolar institutions populated only by rich and poor with no one of the middle class to bridge and to encourage communication?

How are we perceiving and what are we doing about the problems that have coincided with the development of the suburban pockets of affluence and academic excellence which lie between urban and rural decay? As I suggested earlier, there are students coming to colleges now rich in academic preparation but poor in life experiences. As you look around at the taxi drivers, at the leather craftsmen, or the wandering minstrels with college degrees it is evident that some of our best students are becoming defensive about their talent, or rejecting it entirely. In the past young people were frustrated by what they did not know. In a strange way people are becoming ashamed of what they have learned as if their knowledge suggests a privileged and unearned or dangerous legacy from society. David Riesman spoke with an astronomer at Cal Tech who told him, "I am an astronomer, an astronomy graduate student. I love it, I admire my teacher, and I can do the work, but do I have the right to be an astronomer in this society?" Two years ago, at another college, a summer school program was conducted for high school students from weak educational backgrounds. The classes were taught by young white graduate students who had grown up in the affluent liberal intellectual suburbs of America. A colleague of mine entered one of the classrooms to observe. He heard the white intellectuals telling black disadvantaged students from the south, "Don't lose your soul, don't take on

this intellectual 'bag,' don't get hung up in the academic world, stay the way you are." My colleague, to his credit, exploded at this new form of condescension. He reminded those teachers that they had long since escaped the intellectual and economic ghettos of this world that had once held their ancestors. My colleague strongly disagreed with those who, having long since escaped ignorance themselves, would tell uneducated young people that the only ladder available to them to escape ignorance would rob them of their soul, rob them of their essence, and that the ladder should be burned. No one denies that knowledge can be misused, but I am not aware that anyone has devised a technique for the reentry into Eden. For better or for worse, knowledge is with us; and just that — for better or for worse.

Is it possible that for some the intellect is out of balance or ahead of the psyche? Is it possible that some schools may be too good? Is it possible that the quest for curriculum changes is not a request for different ideas and facts but a rejection of the process of absorption? Students now say that they would rather chew and swallow by themselves, even at a less efficient rate, than be fed by a stomach pump. There may be answers to these problems. We are encouraging more and more students to give their brains time off, to take a year off before college, to take a year off during college. It is also possible that young people may be able to have wider social, work, and summer experiences. But work for young people is less available in society now than it was ten years ago. I have the feeling that for some there may be a critical amount of dirt and sweat that is required before they are whole, and before they can mature fully in intellectual terms. In youth this may be rough work or play. In adulthood it may be an escape to Walden in the positive sense or it may be the anti-intellectualism of the tatters and earthiness that we are now seeing. A casual observation in Cambridge of those who dress in the style of the romanticised poor



would clearly indicate that in general, those people have never known poverty. Students who have (Blacks and those from blue collar backgrounds) are eager to leave their tatters behind. The new sackcloth and ashes may be penance for unearned or misused affluence. The symbolism, writ large, is a powerful warning about the uses and misuses of affluence. As a symbol it says much. Do not turn away at the sight of the tattered young person. We should be grateful for the message it cries out. But as a life style — in personal terms and to the extent that it is antibeauty, antiknowledge, and anticulture — it is frightening. As Professor Riesman has said, it suggests that they perceive the “abysses of society and would tear down her cultural and intellectual heights in a vain (and the word vain has perhaps two meanings) attempt to fill up the abyss.” The destruction and the leveling of our few precious cultural achievements will never fill up our valleys, let alone do much to raise the barren plains. Peaks serve best as inspiration and retreat not as land fill. For those of us whose talents lie in medicine there are special privileges and responsibilities. There

is a demand for our services which gives us professional and psychological independence — the chance to take a false start and start again. We are trained to collect and respect data and simultaneously to act decisively on insufficient data when necessary. We are taught to titrate and respond to feedback. The secretion of insulin and ACTH and the tubular reabsorption of sodium are all exquisitely responsive mechanisms, not something turned on or off with bureaucratic totality. Most of all, medicine obliges us to be trained before we act and to use that training in a way to express our social concern. I am saying that you can serve your cause only if you are prepared. Dedication without skill is only frustrated sentimentality; skill without dedication is educated irresponsibility.

Let me close with a quote from Professor Jack Adamson of the University of Utah, who wrote recently of the legend of St. Michael. “Only three hundred years ago,” he wrote, “a legend had grown up in England that her supernatural guardian, a warrior angel, St. Michael, would appear in Cornwall if the nation faced destruction. Spain and England

had been enemies for so long that an assumption had also grown up that St. Michael when he appeared would always look toward Spain. The time falsified fixed ideas and Spain actually had long since ceased to be England’s enemy. Rather, the peril now was from within — the growing anger and violence from rhetoric and lack of understanding, and a young poet, Milton, who knew this believed that the angel was now looking in the wrong direction. He tried to give England a new policy, and he succeeded at least in giving her a great line of poetry when he wrote ‘Look homeward angel now and melt with ruth,’ that is, with pity and with compassion.” Professor Adamson went on to write that if he were a future historian of America this is what he would like to be able to write:

Americans in the mid Twentieth Century were large, loud and sensate. They had learned how to make and build and fight all of which had been necessary. But a new American was needed, one who knew how to give, to feel, and especially, how to yield, how to harness and train all that assertiveness, all that egotistic energy, that strove to make the world over in its own image. The Americans have subdued nature, conquered disease, and diminished space, but there was something unlovely in their method. Something that lacks gentleness and solace. They needed a new and softer music of the inner life. At that time there arose a new generation which turned away from the jungles of Asia and the deserts of the moon, a generation that looked homeward with compassion.

Can we be proud of what we are and what we came from simultaneously keeping our souls and our fundamental desire to learn? And most of all, can we take pride in our physical and intellectual capacities, such as they are, and accept the responsibility for their productive expression? Medicine may contain within it the best of all possible ways to do these simple and difficult tasks.

To Build CASTLES IN THE Air:

A HISTORY of THE

DEPARTMENT of Physiology

by A. Clifford BARGER '43A

IN 1869, some months before President Eliot invited him to join the Faculty of the Medical School to teach physiology, Henry Pickering Bowditch wrote to his mother from the Collège de France in Paris: "I have been building all sorts of laboratories and medical schools in the air. In this labor I have been materially assisted by Coll. Warren who is quite convinced that something ought to be done to raise the standards of scientific education in our community. I mean, of course, particularly medical science."

How well he transformed the castles in the air to reality is apparent as we glance around the quadrangle. Bowditch initiated the construction of these buildings, was instrumental in securing the land for the school and for the neighboring hospitals, and prophetically, with the help of his friend of Paris days, John Collins Warren, raised the funds to complete the project, "a monument to the vision and faith and devoted efforts of these lifelong companions."¹ But Bowditch would be prouder of the Castles nurtured within the walls of the department of physiology. As Dr. Castle spoke, Bowditch, I am sure, was watching with fatherly pride from the parapets, saying, "well done."

Bowditch did not accept the first offer Eliot made; to return to Boston at that time would have interrupted his plans for a period of study with Ludwig in Germany. Moreover, he was uncertain that he could afford a life of pure science, having written "pure science in our country

is rather hard to live on."² He was also aware that it was a gracious Harvard custom to allow an incumbent of a new chair of science to furnish his own apparatus, a tradition that would have necessitated a considerable outlay of funds. Fortunately for physiology, and for Harvard Medical School, Bowditch was assured by his father that he would have adequate support for a career in science. Thus, when Eliot repeated his offer in April 1871 — one hundred years ago — Bowditch accepted the offer of an assistant professorship of physiology and the opportunity "to take part in the good work of reforming medical education." He was the first member of the medical faculty who did not choose to practice medicine in addition to his research and teaching, thus establishing full-time pre-clinical sciences at HMS. Bowditch was assigned two small attic rooms in the old medical school building on North Grove Street to set up the equipment he had purchased in Germany for the laboratory, the first physiological laboratory for student use in the United States. In addition, with a prescient vision of the unity of medical sciences, he opened the doors of this tiny laboratory to anyone truly interested in the advancement of scientific medicine. As Cannon noted, "these rooms might perhaps be better designated the first laboratory for experimental medicine established in this country, for every phase of experimental medical work was represented there within a few years after its establish-

ment" — general biology, experimental pharmacology, pathology, and surgery, as well as physiological research.³ It was in the chemical hood in Bowditch's laboratory in 1884 that the cultures were planted that have grown into the department of bacteriology.

One hundred years ago Bowditch published his first paper, soon to become a classic describing both the *trappe* or staircase phenomenon in heart muscle, and the all-or-none law. Rare is the investigator who has reported two fundamental observations of such importance in his first paper. Cannon, who succeeded Bowditch as the Higginson Professor, was less fortunate. He had to wait for his second paper (albeit his first from the Department) to enter the Hall of Fame with his pioneering studies on gastrointestinal movement studied by the Röntgen ray. These observations, made by a first year medical student only a year after the discovery of X-rays, were the foundation of gastrointestinal radiology. In this research on digestion, the importance of emotional factors soon became apparent, stimulating an interest in the effects of strong emotions on bodily function and disease states, and thus laying the scientific basis for a second area of medicine, that of psychosomatic illness. These investigations quite naturally led to the study of the sympathetic nervous system, to the discovery with Uridil in 1921 of the release into the blood of the sympathetic transmitter, to the development of the roles of Sympathin E and I with Rosenblueth, and to the elaboration of the concept of "homeostasis." Few have made such important contributions to physiology and to medicine as the man whose hundredth birthday we shall celebrate on October 19, 1971.

In the 1920's, physiology at Harvard was represented by four groups, all housed under one roof and bound together by a loose organization known as the "Laboratories of Physiology." The oldest was Cannon's department. The second was the department of comparative physiology

under William Townsend Porter, the third the department of physical chemistry under L. J. Henderson, and the fourth the department of physiology in the Harvard School of Public Health under Cecil K. Drinker. Cannon, Henderson, and Drinker are names well known to all of you, but few may recall Porter, an unsung hero, a man who did not learn, unfortunately, until late in life, that one must think with one's heart as well as one's head.

Dr. Porter had already been professor of physiology and chief of surgery at St. Louis Medical College for five years, and had founded the first physiology laboratory west of Dedham when Bowditch persuaded him to come to Harvard as assistant professor of physiology in 1893. (With such power of persuasion no wonder President Eliot made Bowditch Dean of the Medical School.) Porter had already made his reputation as a superb cardiovascular physiologist at an early age. Bowditch must have held his scientific ability in great esteem for he characterized Porter in 1902 as even more brilliant than Cannon. Porter was brought to Harvard to reorganize the teaching of physiology, and in particular, to introduce routine laboratory teaching. At that time, as Landis has written, "physiological research and teaching were hampered by the necessity of importing physiological instruments from Europe at costs which were prohibitive for many of the younger and newly established American laboratories. Professor Porter's devotion to physiology, together with his love of perfection in experimental technique and reasoning, led him . . ." to establish the Harvard Apparatus Company, an independent, nonprofit organization dedicated to the advancement of laboratory teaching in physiology and allied sciences.⁴ The profits from this company today are administered through this department by the Porter Development Committee of the American Physiological Society for the sole purpose of increasing the number of blacks in physiology.



Porter and Bowditch were convinced from their own training in Germany that students must have first hand knowledge of their subject if the "standards of scientific education" were to be raised, otherwise "much of the student's learning is mock physiology, based on mock anatomy."⁵ Thus, at the turn of the century, laboratory instruction in physiology was allotted nearly 200 hours. Porter had emphasized in 1898 that "the force now making for reform is irresistible. It is nothing less than the conviction that the mass of knowledge in every department of medicine is grown so huge as to overwhelm both professor and student. The only refuge lies in a thorough mastery of the scientific method. The medical student must acquire *power* rather than *information*. Only thus will he be able to hold a steady course through the baffling winds and cross currents of a veritable sea of knowledge."⁵

During the 20's and 30's Cannon's department attracted students from all over the world. They came to the laboratory of Forbes, where studies on spinal reflexes were exciting much interest, and where the vacuum tube amplifier was first introduced into physiology; to the laboratories of Davis, who was pioneer-

ing in electroencephalography and auditory physiology; and to Cannon's laboratory, where Bard made his start on "sham rage," and where Rosenblueth was collaborating with Cannon on the autonomic nervous system and neuromuscular transmission.

In 1943 Eugene M. Landis became the third Higginson Professor, the first who was not a graduate of HMS. As a former professor of medicine he sagely anticipated the increasing demand for "relevance" of physiology to medicine, and introduced more human physiology into the curriculum. I am sure many of you remember vividly the laboratory experiments on human blood pressure, the hot and cold room trials, the sinking blood pressure on the tilt table, and the blood flow changes in the hand induced by mental arithmetic, or better still, by EML's rapid-fire questions on capillary circulation, while you were literally glued to the bench.

Landis, too, had made an early start in research, writing his first paper on *Drosophila* and *Mendel's Law* when he was only 18. "A few years later, as a medical student at the University of Pennsylvania, he became interested in the physiology of the capillaries. Inspired by the permeability studies of M. H. Jacobs and the elegant microinjection techniques of Robert Chambers and A. N. Richards, he set out to do the impossible on single capillaries. By 1925 he had made the first unequivocal measurements of capillary pressure, based on direct micropunctures of single vessels. This was the beginning of a series of investigations leading to modern knowledge of capillary permeability and control of the microcirculation."⁶ What a transformation he made in the field! "By 1928 Krogh, in the first revision of his book on the capillaries, could write, ' . . . the situation has now been wholly changed by the brilliant work of E. M. Landis . . . whose methods open up the possibility of an intimate understanding of capillary physiology far beyond anything to be imagined before.' "⁶

The review by Landis and Pappenheimer (the fourth Higginson Professor) on the capillaries in the *Handbook of Physiology* is truly the bible of capillary physiology.

THE department has played an important role in strengthening physiology throughout the country. Bowditch was one of the founders of the American Physiological Society in 1887, and was its first President. Thus, a tradition was born: 15 presidents of the Society have been associated with the department. Soon after the founding of the Society, the question of publishing its own journal arose, but the problem was not resolved until Porter volunteered to undertake not only the managing editorship, but also full financial responsibility. The *American Journal of Physiology* was started here in 1898. In 1914 Porter turned the journal over to the American Physiological Society. Little wonder that he was given the unprecedented honor of election as Honorary President of the Society for its 50th Anniversary Celebration in 1938.

In honor of Dr. Bowditch, the American Physiological Society established a Prize Lectureship in 1956 for young physiologists, and it was only natural that a member of this department, Dr. John R. Pappenheimer, inaugurated the series. Ten of the 15 Bowditch lecturers have been members of the department, including T. H. Wilson in 1962, and J. A. Herd this year, whose address was appropriately entitled "The Physiology of Strong Emotions: Cannon's Scientific Legacy Reexamined."

I could go on for hours recounting the contributions made by graduates of the department, or the research fellows and their subsequent careers as leaders of clinical departments (Aub, Blumgart, Castle, Ayer, Binger, Beecher, Cobb, Churchill, Wearn etc.), as well as the myriad heads of departments of physiology, and the pioneering research emanating from the department. The true value of a

department to a school is the total contribution it makes. I have alluded to the catalytic role Bowditch's laboratory played in experimental medicine, and the origins of the bacteriology department there. But what of the relationship of the physiology department to other departments?

From the *Official Register of Harvard University, the Medical School 1905-1906*, it is apparent that Bowditch had built a strong, well-staffed department.

Physiological and pathological chemistry had not fared as well; no member of the staff had faculty rank at that time. But all this was soon to be changed, almost singlehandedly, by a physiologist who, throughout his career, fought for the underdog. Walter B. Cannon had argued before the Faculty that instruction in biological chemistry should be expanded to four full months in the new curriculum. In his diary of April 11, 1906 I discovered the first notation regarding Otto Fölin, who was to be the founder of the present department of biological chemistry.

"Dined this evening at Dr. Fölin's with Cornelia and Frances. Dr. Veblen of Chicago University there. Stupid evening."

From that inauspicious start let me skip to February 27, 1907: "Spoke to Dr. Bowditch about desirability of getting Fölin."

March 18: "Saw Dr. Councilman about Fölin. He thinks we must get Fölin and believes getting him is a possibility. At home and early to bed but not to sleep."

May 6: "Letter from Benedict stating Fölin regarded in Europe as nearly a genius — sent this to President Eliot. Demonstration poor today."

May 15: "Learned Dr. Fölin had offer of \$4500 at Rockefeller Institute. Told Drs. Councilman and Bowditch. Told President Eliot. He thinks we can't compete."

May 19: "Saw Dr. Fölin at Waverly and talked with him about staying here — salary OK, but wants full professorship."

May 20: "Committee of Full Professors met 5:30 unanimously voted Fölin Associate Professor in Biological Chemistry." Cannon



must have slept well that night.

The department of physiology has been instrumental in bringing about a number of important educational innovations in the Medical School. For example, Eliot and Bowditch spoke frequently of the elective system which Eliot had introduced in the College; Bowditch was anxious to inaugurate a similar program in the Medical School. Bowditch's presidential address to the American Society of Naturalists in 1898 had a surprisingly modern ring. Speaking of the changes that had occurred in medical education in the last quarter of the century, he stated that "at the beginning of this period it was possible to impart to an intelligent medical student in three years' course of study a considerable fraction of the acquired medical knowledge of the time. . . . At the present time, were we to seek to give the same student a similar proportion of the accumulated knowledge now at the disposal of the profession and to teach him the use of the refined modern methods for the study and cure of disease, it may be reasonably estimated that a ten or even fifteen years' course of study would be required."⁷

He went on to explore the various facts of the problem and noted that "it seems, therefore, to be evident that in arranging a course of medical study a distinction must be made between those subjects which it is *essential* that *every* student should know and those subjects which it is

desirable that *certain* students should know. . . . In other words, provision must be made both for required and for *elective* studies." This was the beginning of the elective system at HMS.

The tutorial system in physiology was established in 1923 under the guidance of Dr. Alfred Redfield, to broaden the opportunities for students to pursue, under faculty guidance, studies outside the regular curriculum. Redfield established a special course in experimental physiology which emphasized the newest techniques, exciting new fields of interest, and served to encourage students to undertake research in physiology. When Dr. Redfield returned to Cambridge, he was succeeded by Dr. Philip Bard. When Dr. Bard left for Hopkins, Dr. Rosenblueth, to whom Norbert Wiener was later to dedicate his book *Cybernetics*, was selected as tutor. Rosenblueth was a man of strong views which he presented with typical Latin volatility in the give and take of the tutorial seminars. One of the tutees, somewhat critical of the thesis developed by Dr. Rosenblueth in a tutorial session, decided to go beyond the assigned library reading, which was heavily weighted with Dr. Rosenblueth's own papers. He found a publication critical of Rosenblueth's position, and with some degree of sardonic satisfaction, confronted Rosenblueth with the evidence. He said, "Dr. Rosenblueth, I just found an article by Dr. X in the *American Journal of Physiology* in which the view you presented last week is challenged. I am sure you know the paper to which I refer."

Without blinking an eye, and with characteristic self-assurance, Rosenblueth replied, "Young man, I don't read 'em, I write 'em."

The educational innovations introduced by members of the department of physiology were not limited to the area of preclinical instruction. The case system of teaching medicine was introduced by Cannon. In the late 1890's Cannon and his fellow students were subjected to four hours of continuous lecturing, from

two to six o'clock, five days a week. Little wonder that he questioned whether the didactic lecture was "the most satisfactory and effectual method of drilling the mind to careful thought in diagnosis and prognosis."⁸ Cannon had envied the eagerness and zest with which his roommate, a Harvard law student, and his classmates discussed cases and their implications, a method of instruction introduced by Langdell. Cannon noted that they learned a lot, not by dreary grubbing at textbooks or lecture notes, but by vigorously "threshing out a case" with one another. Cannon adapted the case system for medicine, with printed data from actual case histories gathered from the various hospitals. In his senior year Cannon was able to report that Dr. Richard Cabot's case exercises had the largest regular attendance of all clinical exercises in the fourth year.

Another measure of a department is the dedication and devotion of those whose names only appear in the acknowledgements of the papers published from the department, but without whom the department could not function. I speak of Tom Barnett, Louie Freni, Fred Christensen, Herman Goslyn, Franklin Smith, Jim Nichols, and Peggy Lohan. Collectively their tenure in the department is nearly 200 years.

What of the department today? Happily I can report that the patient looks much younger than his stated age. I shall, however, say very little about the department today, for it would appear immodest. We must allow a longer period of filtration to obtain historical perspective. However, I must add a word of tribute to the present chairman of the department, another Pennsylvania product who, like Landis, was a pupil of Jacobs. Dr. Wilson has strengthened immeasurably the areas of transport and cellular physiology. Today, a wide range of research interest is represented, from subcellular physiology to integrative or system physiology. For example, some of the areas now under investigation are:

Role of the cerebrospinal fluid in humoral transmission of sleep.

Behavioral regulation of cardiovascular function.

Secretion of macromolecules: Intracellular transport and regulation.

Feedback control of muscles and movements.

Regulation of energy supply in muscle contraction.

Control of growth and atrophy of skeletal muscle.

Membrane transport of sugars.

Control of purine transport and metabolism.

Localization of transport systems in single renal, tubular cell by electron probe microanalysis.

Pathogenesis of hypertension and coronary artery disease.

And finally with students in the department such as: Susan Burwen, Jeff Drazen, Dick Fulks, Don Godfrey, Tom Honeyman, Meredith Kusch, Ken Lee, Jeanne Li, Colleen Meier, Ed Mroz, Dick Nichols, Dick Odessey, Jessica Swartz, Tom Ukena, Nate Wasserstrum, and Helen Yin, we can look forward to the 200th anniversary of a vigorous department of physiology here at the Harvard Medical School.

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The afternoon program on Alumni Day was devoted to a discussion of "The Interface between Students and Alumni." Following are the speeches presented that day.

STUDENT-ALUMNI INTERACTION

by Kim MASTERS '72

INTERACTIONS between students and alumni divide themselves into two categories; student relations with alumni who live nearby, and student relations with alumni who live far away.

Students are in daily contact with many alumni faculty members. These interactions occur both on a one-to-one basis and in more formal settings. The personal relations are probably no different or less rewarding for both teacher and student today than in years past. But given the increasing complexity of university life, it has become advisable for students and alumni to trade ideas on a more official basis.

The Student-Faculty Committee (SFC) exists to bring issues of general interest to the Administration's attention. Most of the faculty members on the Committee are alumni and alumni have their own representative in the person of the director of alumni relations.

To attempt to strengthen ties with non-faculty alumni, the SFC participates in three programs; one-month visits by students to an alumnus in community practice; one-day visits (60 students in the Class of '73 took advantage of this program last spring); and dinner programs, where students are invited to alumni homes for dinner.

Relations between students and more distant alumni are much less satisfactory for the obvious geographic reasons. The same programs that are strengthening the ties with nearby alumni could be broadened to include distant alumni. More one month electives and more frequent regional meetings might be feasible.

Since all of us have made a commitment to medicine, and inherently to improving medical care, to isolate ourselves from one another, no mat-

ter how divergent our viewpoints, would seem to be counter-productive to our goal. I would like to focus on the criticisms of those few alumni who feel completely alienated from the students. The gist of their objections centers on the political views and actions of some medical students. Two issues are raised: to what extent should students involve themselves in politics, and to what extent is so-called "radical" politics an acceptable form of student involvement to these alumni?

First, some alumni maintain that students should stick to their studies and forswear political involvement. But, the decision to give up political activities is itself political. History has repeatedly shown us that political agnosticism on the part of scientists and physicians can lead to the most unbridled atrocities. The most obvious examples that come to mind are the acts of some Nazi physicians, particularly those who presided over concentration camps. It seems to me that no scientific discovery has ever been made without political implications.

One may counter that most physicians do not make discoveries, but take care of sick people, and politics interferes with this task. It may well be that political views can complicate doctor-patient relations, but the political concerns of which I speak have more to do with the future of medicine than with personal views on specific issues. The current crisis in medicine and the delivery of medical care demands the concern of students who are going to deliver that care. This issue clearly has global implications because this country's approach to medical care is as much a product of its commitment to military spending, disarmament, environmental control, etc., as

it is to medicine itself. For these reasons, I think that the political interest of medical students is desirable. Furthermore, I think we should find ways for students and alumni to share their political views so that we can approach our future problems in a more constructive, if not unified, fashion.

Second, some alumni have been upset by the so-called "radical" views expressed by students. Many beneficial things can derive from seemingly extreme viewpoints. The most important of these is that moderate and conservative thinking are brought wholly new perspectives. Often some of these ideas are incorporated into society and form the basis for social change. Disgruntled people have labelled the process "co-optation," but without it society would never change. It seems clear to me that we have much to gain from the influx of new and even threatening ideas into our lives. We ought to be happy that there are those who are willing to offer these views despite the abuse they receive. Apart from the fundamental differences of opinion separating some alumni and students, there is much rhetoric that clouds the issues. Rhetoric serves the purpose of arousing interest, but I suspect that there would be much less disagreement if we were better able to stand back and read the thought content between the lines.

Far more disturbing than the anger of some alumni is the attitude that they want nothing further to do with the school. This attitude is unfair to the school, to the student, and to the alumnus himself. It is unfair to the school, because for whatever political views hedge its life, the school is fundamentally in the business of educating future physicians.

In this task it needs all the assistance it can get in terms of talent, advice, and financial support. To absent oneself from the institution because one's views are not accepted, is really destructive to the fundamental goals of physician education to which we are all committed. It is unfair to the student, because in cutting himself off from the school, the alumnus cuts himself off from discussion and teaching experiences with the student. It is through these kinds of activities that education becomes more fulfilling. Finally, it is unfair to the alumnus himself, because it cuts him off from sharing experiences with faculty and students. I cannot help but feel that what will save us from losing our

sense of perspective is the continual challenge of new ideas, no matter how incomprehensible or senseless they may seem.

There is ample reason for every alumnus to be interested in what students are doing, and for every student to have an interest in alumni activities. If the arguments of mutual benefit do not hold sway, then those of exigency must. There is a wind of change blowing across the field of medicine. To some, it is an ill wind that blows no good; to others, a good wind that blows no ill; but to many, it is somewhere in between.

In future years, both students and alumni must take the initiative to make their inter-relation the kind of fruitful experience it should be.

skills were improved in distinguishing the sick from the worried well, and I learned to reassure them both.

In the hospital, I was surprised and delighted to find that the problems we dealt with were as interesting as those encountered on the Bullfinch at the MGH. I found that a disease like agranulocytosis can be treated successfully in a community hospital. I customarily worked a patient up, dictated a history, and planned management. Dr. Seidl then did his own history and physical to the degree he thought necessary.

The community surgeons, obstetricians, and orthopedist made me welcome. I was invited to assist at any operation, and sometimes served as first assistant. It was in Wareham that I received my first teaching in obstetrics. It was good to discover how much community physicians had to teach. I was the first medical student most had seen since their own medical school days, and I sometimes felt they were fulfilling a long suppressed desire to teach.

The viewpoint on medical practice I gained in Wareham was quite different from that of the preceding two and a half years in medical school. I was out in the world of the "LMD," able to evaluate his ability closely instead of seeing only his mistakes, as selected by the medical school hospital emergency room. Overall, I was favorably impressed by the general competence, as well as the enormous amount of work being done.

There is no question that there was a lag in the details of current information on diagnosis and therapy, but the community physicians had their own strengths. If they were less refined in treating diseases, they were more skilled in treating patients.

Treatment often extended beyond the patient to involve the family. An example of this came one night when I was having dinner with the Seidls and the telephone gave a too familiar ring. It was the family of a patient with a terminal illness. They believed he had just died and wanted Dr. Seidl's confirmation. As we

STUDENTS AND ALUMNI IN FAMILY PRACTICE

A STUDENT'S VIEW

by PHILLIP E. C. COMPEAU '71

A year ago, as a third year student, I spent a month working with Dr. Larry Seidl, in his private practice in internal medicine. He practices in Wareham, a town of 15,000 in southeastern Massachusetts, located on Buzzards Bay, close to Cape Cod. In the summer, the town's numbers are increased by an influx of tourists. In April, when I was there, the summer vacationers were at work in New York or Boston, and only the permanent community residents remained.

My time was for the most part divided between Dr. Seidl's office and the Tobey Hospital, a 60-bed general hospital with a newly built intensive care unit, well endowed many years ago by Alice Tobey Jones, whose wealth came from the cranberry industry, which is still a prime source of income in Wareham. During office hours, I saw pa-

tients selected by Dr. Seidl. I introduced myself as a medical student and saw them first, then Dr. Seidl would see them. None refused and most appeared quite happy to have me see them. I would give my clinical impression to Dr. Seidl, and he nearly always had something to add about medical management, or how the patient and his family dealt with disease. He would then see the patient, with me if he thought it valuable, or by himself if he thought the patient might have something to say to him alone. Thus, the right of the patient to privacy and personal consultation with Dr. Seidl was preserved.

Working in the office allowed me to participate in the day-to-day management of patients with chronic disease, a subject often omitted from the clinical curriculum, with its emphasis on acute medicine. My



the subcommunity of the sick and worried well, I learned the nature of the population the community internist is likely to treat, as well as the degree of selection engendered by his own patient preference. Wareham has a microcosmic medical subcommunity, and I was able to talk with everyone from the hospital administrator to the bookkeeper. I followed patient care from precradle to grave, admitting office to cashier.

COMMUNITY medicine in Wareham is not what is often meant by this phrase, i.e., the provision of medical services to the urban poor. It may be, however, that the values to be learned in a rural community, where the New England town meeting is still a vigorous institution, will provide useful principles for medical care in the ghettos.

What distressed me most about the medical subcommunity in Wareham was the gap which separated it from a university center, a schism bordering on alienation, with suspicion on both sides. I recall in particular a hematology-diabetes conference given by three members of the Thorndike Lab at Boston City Hospital. Arranged by Dr. Seidl, the meeting was disappointingly attended. As a third year student, I found the talks aimed at my level of understanding. By contrast, many who attended either found the material too theoretical or were unable to understand fully. The problem was the visiting experts had little sense of their audience, the result no doubt of being unaccustomed to talking to community physicians.

The community physicians' feeling toward university hospitals was often one of alienation. More than one complained about the results of sending patients to Boston. Patients were sent to benefit from superior diagnostic or therapeutic techniques, but with ever-changing hospital staffs, follow-up was sometimes faulty. Wareham doctors complained

that they were left to rely on rumor to discover the patient's response to therapy or to learn that an unusual disease had been diagnosed. Occasionally, there were patients for whom university hospital therapy failed or resulted in unfavorable side effects. They were simply dropped to follow-up and the community physician was left to pick up the pieces. Follow-up is a strong suit for a community physician; his mistakes, failures, as well as his successes, will influence his reputation in the community.

Clearly, there is a need for a rapprochement of the university and the community in which each becomes increasingly sensitive to the special skills and needs of the other. The lines of mutual communication need to be improved, perhaps including telephone consultation services or diagnostic/therapeutic computer stations. Community training of both medical students and house staffs would be a valuable part of such a rapprochement for they have much to teach as well as learn.

Looking back on my rotation in Wareham, I am still puzzled that I was the first student at HMS, at least in recent history, to take such a rotation. The reluctance of Harvard students may be due to the prevalence of the ethic of excellence in "academic" medicine. I found that community medicine requires its own special and no less demanding brand of excellence. I suspect that there is a large, unused resource of teachers among Harvard alumni who are community physicians, many of whom would find their practice enriched by the presence of medical students.

At a time of great need for community physicians, Harvard has a responsibility to promote excellence in community medicine. Indeed, we may go one step beyond. If the strength of the medical school has been the diagnosis and treatment of disease, and that of community physicians the treatment of patients and family, together they may become strong in comprehensive community care.

drove 10 miles to their home, I thought of my previous experience with death. Like many medical students, I had had little before medical school, but remembered scenes of unexpected tragedy and families banished to waiting rooms; scenes of needles, tubes, electric shocks, and one final EKG. In contrast, we found a patient who had died at home with his family. There were no tears, only an atmosphere of quiet grief. In this setting death, somehow, was easier to accept.

At University centers, it is often difficult for medical students to gain a sense of the community — the university hospital community is too large. Furthermore, the clinical years may easily include months spent at nine different hospitals. With a good guide, however, the Wareham community was small enough to comprehend even in a month.

If Dr. Seidl had a lesson uppermost in his mind, it was that each community has a different set of problems which it must solve in its own way — problems imposed by the nature of its financial resources and, most important, by the character of its patient and physician subcommunities. The uniqueness of individuals in Wareham blended to form community strengths and weaknesses. Indeed, it is hard to make Wareham come to life without telling many personal anecdotes. From

by LARRY G. Seidl '61

AT the suggestion and with the encouragement of Dr. James Jandl, George Richards Minot Professor of Medicine at Boston City Hospital, I have been privileged to offer as an elective to Harvard medical students a month long course called, "Family Medicine in Wareham," which is a small community on Buzzards Bay where I live and practice.

Like many phenomena, medical education has its cycles and swings of the pendulum. A number of signs seem to point to the need for increasing involvement of physicians who are practicing apart from university hospital complexes. Some of the clinical education of medical students should be by the preceptor method. Professor Robert Haggerty, formerly of Harvard, now at the University of Rochester, writing in the January 1971 *Journal of Medical Education*, says that the key challenge in medical education today is finding and training personnel to meet the demand for medical care at the primary physician level. To accomplish this, he feels that new educational settings in the community must be developed. Physicians already in community practice should teach the delivery of health care. In my opinion, this approach is superior to establishing community medicine departments in referral teaching hospitals, because it makes possible significant benefits for the students, the medical school itself, the alumnus doctor-teacher, and the community in which he works.

Unlike the super specialist who most often is the last authority or the perfect doctor in his carefully circumscribed field, the family physician or generalist's achievement rests on "being an adequate doctor to each patient, accepting this responsibility and the frustrating inability to be perfect which is implicit in the situation." It is important for students to be exposed to this

"caring, not only curing" approach. In the family doctor's office, students learn about working with para-professional personnel like receptionists and billing clerks and office nurses. A student's exposure to fascinating clinical problems takes on new dimensions in the setting of the community. Such an approach is often lacking in a large, impersonal teaching hospital. The opportunity for private tutorial experiences with practicing physicians provides a favorable student-teacher ratio.

The medical school would benefit by developing a diverse community oriented capacity, an important objective mentioned by Dean Ebert in a major faculty address in April. A vast pool of clinical problems could be tapped for utilization by students.

I was the recipient of misleading information about the nature of community medicine before leaving my residency and fellowship to go into practice. I suspect this was due chiefly to a lack of valid and reliable information about conditions and problems associated with community practice. Exposing medical students to practicing alumni physicians could not but help to educate all associated with medical education.

There are innumerable benefits for the alumnus doctor if he is able, for a few months of the year, to interact with medical students. Teaching, of course, has its own immediate rewards, plus the long term, intangible ones. Teaching forces an alumnus practitioner to rethink and justify his medical practices and decisions, continuing his own medical education as well. The idealism and youth of the students represents a positive spin-off, and is a force, I think, which has kept teachers like Dr. White, Dr. Castle, and Dr. Blumgart young men despite their increasing years of experience.

The community in which the physician-alumnus-teacher practices

benefits from a preceptor type of family medicine education program. By their very presence, students improve patient care. Everyone steps a bit smarter and cuts fewer corners because students are there. A teaching hospital atmosphere is created in which procedures and concepts are constantly questioned. Good education is a two way street; alumni learn much from junior colleagues.

There are pitfalls and difficulties in establishing such a program. For some students and their wives, housing and transportation may prove difficult. Some students still hesitate to leave Boston and its full complement of lectures, longitudinally organized courses, psychotherapists, or what have you. There is too much suspicion and ignorance on both sides. Many community physicians are wary of medical school motives, seeing a predatory monster with a dean at the controls and tentacles reaching out into the countryside for additional teaching beds and surgical subjects. In the medical schools, the practicing physician is too often viewed as an economically motivated, rather unscientific person who spends much of his time doing unnecessary physical examinations on the worried well. Practicing satisfactory medicine takes time, and so does teaching it. Teaching skills and the presentation of material must be polished and rethought continually.

My proposal is a modest one — that alumni in private practice share their experiences with medical students for a few months each year. Practitioners in New England or the Northeast could be chosen initially. If this is successful, alumni across the land might be tapped as additional resources. An internship tour is customary during the clinical years. Perhaps an alumnus in Montana, Missouri, or Alabama could arrange for a student to spend several weeks in community practice. Primary physicians need not be the only alumni practitioners chosen. The opportunity to observe a non-academic specialist at first hand may have a deciding influence upon the career choice of a medical student.

HARVARD ADMISSIONS AND THE MINORITY GROUP STUDENT

WOMEN IN MEDICINE

by ALEXANDRA J. MURRAY '72

THERE are relatively few women physicians in the U. S. compared to other countries. In a group of 10 countries cited in the Josiah Macy Jr. Foundation report, the U. S.'s low percentage of women physicians is matched only by Spain. This small proportion of women doctors testifies to an important neglected source of potential physicians.

Women have much to give to medicine. Most of what they have to give is the same as what their male colleagues have to offer; hard work, intellectual discipline, technical skills, and compassionate concern for their patients. Each doctor has a unique combination of qualities determined by heredity and experience, and for the sake of the various needs of patients, women cannot be overlooked. As a group relatively new to the profession, women bring with them new insights into health care delivery, and organization of medical education. The potential for women physicians is great. They can provide support and professional advice to community movements in child care, and education of young children. More women doctors will be needed to meet increasing demands of female patients who often prefer doctors of their own sex.

Women deserve the opportunity to have careers in medicine even if they do not choose to concentrate on those areas for which, as a group, they are ideally suited. An intellectually challenging job has as its reward the restitution of human potential. The satisfactions derived are cherished equally by women and men.

Women bring new challenges to medicine. Perhaps it is more accurate to say that the specific needs of women related to childbearing and childrearing merely highlight a more general need for flexibility in training programs and medical practice. According to one study, 91 percent of women physicians remain in active practice, but 38 percent of these are out of practice for an average of four years because of pregnancy and family concerns (Dykman and Stalsker). It is interesting to note that the Carnegie Institute Commission of Higher Education and National Health made an error in reporting another study (Powers, Parmlee, and Weinfelder). The figure given for the percentage of the sample of women medical school graduates working full or part-time was 45 percent. The actual figure is close to 92 percent. The fact that this error should remain undetected until after publication is significant.

In a study done by Miss Phoebe Williams of the Radcliffe Institute, to be published in the *Journal of Medical Education* this summer, women physicians over thirty years of age responded to questionnaires about their careers in medicine. The study concerned itself with career patterns from entry into medical school through the completion of the study in 1967. The women studied were at various stages in their careers, depending on their respective ages. Sixty-six percent of women physicians in the sample fall into "full-time" or "almost full-time" categories. Forty-nine percent of the sample in the "full-time"

category had worked from the day of entry into medical school until the study was completed in 1967, with no break greater than six months. The 17 percent in the "almost full-time" category had worked full-time steadily with the exception of one or two breaks, all less than two years.

It is sometimes argued that the investment in educating women physicians is wasted by that significant number of women who practice part-time. Perspective is restored when one considers that a 40-hour work week often constitutes part-time for a woman physician.

Women in medicine are faced with real problems — how to coordinate child-bearing and rearing with medical training and practice. Many American women physicians and medical students work during their pregnancy until unadvisedly close to delivery, and return to work within a week or two after the birth of their children. These women feel it necessary to "hold up their end of the bargain" in the eyes of their male colleagues, even at the expense of their own health. In Russia, almost two months' paid leave of absence before and after delivery is granted to women physicians and students, as well as a requirement for no night duty during the child's first year of life, and priority in nurseries and kindergartens. In Hungary, Poland, Turkey, and Sweden similar provisions are made. Surely there is no reason why medical training programs in this country could not be made flexible enough to provide maternity leaves, or leaves of absence for other personal or professional reasons for women, as well as for men.

After their children are born, American women physicians share with other American working women the problem of providing good day care for their children. Babysitting costs often take up the bulk of a professional woman's earnings, and unlike her husband's car, they are not tax-deductible business expenses. Even if she can afford babysitters, the professional woman will

have difficulty, because good, long-term babysitters are rare. The shameful lack of adequate day care facilities is another area in which the U. S. lags behind many countries. The problems of most professional women look mild when compared to those of the much larger group of working women, those who work because of financial necessity. These mothers are forced to leave their children in frighteningly inadequate facilities. Agencies for child care in this country are intolerable. The responsibility for child care is increasingly shared by mother and father and the community; it is hoped that the medical community will assume its share.

The difficulties involved in becoming a woman physician begin long before medical school. Girls are not encouraged to excel in sciences or to entertain professional ambitions. High school and college counselling often perpetuate this negative attitude. Women who make it to medical school admissions committees often face subtle, usually unconscious discrimination in the twilight zone of choosing among the "many qualified candidates." Once admitted to medical school, a woman has the problem of creating a professional identity for herself when available role models are few. If her choice of a specialty is outside of the few fields traditionally acceptable for women, she faces the same subtle discrimination as in her application to medical school. If she should choose academic medicine she will find tenured positions difficult to obtain.

Women who have succeeded in surpassing all the obstacles, are often tempted to overlook the painful memories and recall medical school as a challenging and worthwhile four years. These women are identified with the feminine professional elite that requires them to struggle against difficult odds to prove themselves equal to men.

I am a member of a group of Harvard Medical School women students and physicians who are concerned about the problems of wom-

en in medicine. We have begun a recruitment program designed to encourage women high school and college students to consider a career in medicine. Women medical students and physicians visit colleges and high schools in the Boston area and speak to groups of women students about medicine.

Because of the difficulties in defining objective standards by which medical school applicants are judged, we are also urging a selective increase in women accepted by Harvard Medical School, and an associated increase in women accepted by the training programs of the Harvard teaching hospitals. We are encouraged to see that there will be 30 women in next year's first year class. It is probable that active efforts by the women involved in the admissions process were instrumental in the number of women accepted this year. We hope that our efforts will be even more productive next year.

We were also eager to investigate the possibilities of more flexible training programs for internship and residency, for men as well as women. A pilot survey was con-

ducted in which the heads of training programs in major Boston teaching hospitals were asked for their experience, if any, with part-time programs, and their opinions of them. As expected, few department heads had had any experience with part-time programs, and most expressed skepticism, if not denial of the possibility of their success. Exceptions were found in psychiatry, pediatrics (interestingly enough, fields with relatively large numbers of women) and one in pathology and neurology. It is hoped that we will be able to recruit the talents and experience of these department heads in an honest and imaginative investigation of the possibilities of part-time training programs.

Other members of the group of medical women are actively involved in day care. Some first year students presented speakers on the subject of medical women to their class as a means of introducing their colleagues to the important issues at stake.

The problems of women in medicine are many. There is much work to be done and we need your help.

Black Admissions

by Joseph R. Simpson '73

HARVARD has entered a new era, an era that began in 1968 with the assassination of Dr. Martin Luther King, Jr. In response to a petition signed by 287 HMS students, the faculty and administration undertook a re-examination of the role and relation of Harvard to the Black community, in Boston and nationwide. The Commission of Relations with the Black Community, headed by Dr. Leon Eisenberg, undertook this re-evaluation. The need for such re-assessment was indicated by a number of facts relative to the enrollment of Black students at Harvard Medical School.

In the history of HMS there had never been more than three Black students in any one class. Blacks constituted over 10 percent of the population, but only 2 percent of the nation's MD's were Black in 1968. There was a gap in the simple population representation of Black MD's throughout the nation. Furthermore, of the 200 Black MD's being trained each year, 150 were graduated from two Black medical schools; Meharry School of Medicine, and Howard University School of Medicine. The other 98 medical schools graduated about 50 a year. At that rate, we could never expect any proportional

representation of Blacks in medicine.

Three significant things came out of the Commission on Relations with the Black Community. HMS made a commitment to set aside at least 15 scholarships for "disadvantaged students"; they were thinking of Black students at that time. This was to be over and above any Black students admitted through the regular process. The Committee on Admission sought disadvantaged students who needed extra attention. Another significant development was the undertaking of recruitment programs to encourage more Black college students to apply to HMS and the School of Dental Medicine. The third was the formation of the Harvard Health Careers Summer Program, now entering its third year. This was intended to increase the pool of Black students qualified for acceptance to medical schools.

During the first year of recruitment in 1968, Edgar Milford, one of the two Black second-year students at Harvard, took a large portion of the responsibility for recruiting upon himself. He contacted a number of Black student organizations and other sources to encourage students to apply to the Medical School. The results of these efforts were felt in the admissions of 1969. For the Class of '73, there were 128 applications from Black students; 22 of these were accepted; 16 came to Harvard. In addition, there were three Black dental students accepted, so that we had, for the first time, more than a token number of Black students on the quadrangle.

Were these 16 students "disadvantaged?" I don't think so. Two were Ph.D.'s, one was approaching a Ph.D. in biochemistry, four had graduated from Harvard College, two from Princeton, one from Columbia, one from Amherst, and one from West Point. In fact, only five of this group had gone to predominantly Black colleges. The concept of a "disadvantaged student program" quickly lost favor, and the attention shifted to a minority student program.



At about the same time these 16 Black medical students arrived at Harvard, there was, throughout the country, an increased concern and demand for more responsive medical professionals. The ghettos of the nation, populated primarily by Black and Brown people, had health conditions which were primitive compared to the standards that we are used to at Harvard. There was a growing awareness throughout the country that these needs had to be met in some way.

Some admissions committees perhaps sincerely motivated were wondering if increasing the number of Black medical students would help this situation. Wouldn't Black students do the same thing that medical students have always done? Wouldn't they seek the most lucrative and attractive practices to get away from undesirable roots, as other groups of students have done who came from humble beginnings to an exalted profession? There are several reasons why this is not true of Black medical students. Today's Black student tends to be well aware of the needs of his own community. He desires to respond to those needs so that the community can be self sufficient. This is a positive attitude. We might well expect some medical students from Harvard to return to communities like Roxbury and North Dorchester ghettos, however, we

first need to admit students from these areas. We don't have them yet.

One reason that admissions of Black students cannot slow down is simply because no one else has shown any willingness or capability to fill the needs of the ghetto communities. The medical profession has not been able to do so to date, and there is no indication that, with all the other demands placed upon it, the traditional pool of physicians will respond to those particular needs. We would expect that continued admissions of Black students is a reasonable approach to the solution of increased medical needs of Black communities.

WHAT has happened here since 1968 with regard to Black admissions? In 1970, responding to limited student recruitment, as well as the previous year recruitment efforts, there were 142 Black applicants for the Class of '74. Twenty-one students were accepted, and 21 came. In 1971 there was a more concentrated effort on the part of students to recruit applicants and this resulted in twice the number of applications to the Class of '75, but this time, the number of acceptances was the same as the year before. Twenty-three students were accepted, and only 16 will attend because of increased re-

jections. We're not particularly happy about this past year as we were in prior years, but we expect this was temporary reversal and we can continue to go forward.

Because of the changes I have outlined, Harvard is now in a position to graduate more Black physicians in the next four years than it has been in the previous 188 years of its existence. We trust that an era in which only 23 Blacks graduated

from HMS is gone.

The impact of these graduates will soon be felt where we have too long been absent: the house staffs of the Harvard affiliated hospitals, local medical societies, and the Harvard Alumni Association. As I described earlier, this increased number of Black physicians will begin to make a dent in the great unmet health care needs of our communities.

HMS 1967-1971:

ISSUES AND PROBLEMS

A STUDENT'S VIEW

by DAVID M. BEAR '71

I AM not certain whether the "New Curriculum," the clinical half of which was available to our class, represented more of an issue or a problem during the period 1967-71. As the last class to enjoy — or endure — the traditional basic science years, we have had the opportunity to compare old and new with guinea pig confreres in HMS 1972, frequently during shared clinical rotations. Generalizations are perhaps excusable in a brief overview; it has been my impression that new curriculum students are essentially indistinguishable from old in their preparation for, and adequacy in, clinical courses.

What has been striking from a student's point of view is the continuing, consistent body of substantive complaints about specific aspects of basic science teaching. Too many lectures per unit time are still given in many integrated blocks; five times the maximum tolerable dose of lantern slides are shown by the same readily isolatable offenders known to previous classes. Organization of teaching material, in areas to be left unmentioned including respiratory pathophysiology, remains pitiable.

The mass paranoia about Harvard's fall from grace in Part I of the National Board Examinations will not lead to significant amelioration of these enduring inadequacies in teaching. They are by no means novel weaknesses of the new curriculum and yet, summated over two years of basic science teaching, they surpass in importance the questions of separate vs. integrated pharmacology courses, pairing of physiology with pathophysiology, or lengthening of general pathology and gross anatomy instruction.

Missing from virtually all recent minor and major curriculum changes in the school has been appropriately timed or adequately detailed corrective feedback. There has been no mechanism for separating confidently "the bad in the old" from the "good in the new" or, more poignantly, the bad from the bad. What is needed is a means of modifying the mediocre by successive approximation in the direction of the good, and the good in the direction of the better.

Like a reinforcing stimulus in the operant conditioning paradigm, corrective feedback must closely follow a quantal segment of the rele-

vant teaching behavior if we are to shape an adequate repertoire. "We" here must refer extensively or primarily to students, who are the final common pathway of any curricular impulse.

A step in the direction of supplying such rapid, meaningful feedback on the crucial details of lecturing and laboratory teaching has recently been suggested by the Student-Faculty Committee. Briefly, the scheme requires immediate student response to a lecture or laboratory just attended; a quantitative, machine-processable questionnaire includes specific items on lecture style, pace of delivery, use of visual aids, and clarity of presentation. The instructor then promptly receives statistical feedback on the responses of his group to dissectable and modifiable phases of his teaching effort (cf, the currently extant snakehiss, cold-stare, and newspaper-nap). As an ancillary benefit, the system provides a quantitative, objective, updated account of individual teaching skill and maturation that ought to be of value to integrated block coordinators and a Promotions Committee verbally committed to the reward of teaching ability.

CONSIDERATION of the new curriculum, and the student's potential role as a vital barometer of pedagogical effectiveness within it, leads ungracefully into the broader issue of Ericksonian basic trust between faculty and students, and indeed, between alumni and students. It will clearly require some basic trust of student judgment and motives if faculty members are to submit routinely to candid evaluations of teaching performance. Fortunately, communication across the generation gap has been active and relatively adequate during the last four years.

In a fundamental sense, the evolving new curriculum has both signified and necessitated confidence in medical students' nascent profes-

sional commitment and ethical maturity. While basic details of teaching have in many instances changed minimally or in semi-random fashion, it is a non-trivial feature of the "new" system that one quarter of the first two years now represents elective time for students. The new clinical curriculum, first available to our class, allows free choice of commitment beyond the required medicine, surgery, and three selected specialty rotations. Thus, the compulsory forced-march past details of basic science research, followed by an academic goose-step through each of the clinical specialties, has been broken.

It turns out, I believe, that two trends have dovetailed. This greatly increased flexibility and choice offered the student coincides with at least a statistical shift in Harvard students' interest and orientation. The economics of medicine, distribution of medical care, and sociology of behavioral disease are actively turning students on; overdoses of such faculty favored basic sciences as biochemistry and molecular biology can turn them off "so hard the knobs break."

I have neither the time nor the acumen to discuss this striking phenomenon here. It is clearly evidenced by the use students are actually making of their elective time, by the falloff in student research and thesis preparation, and by their explicit career plans and internship choices. Within the community of hard scientists, one may perhaps sniff some of the same alluring wind of involvement with directly relevant, socially pressing behavioral-ethical issues (cf, the recent migration of molecular biologists into the neurosciences, the explicit concern of new geneticists over the application of their basic research).

While I had expected and was perhaps expected to be non-political, it is hard to suppress the thought that the wanton brutality and colossal social stupidity of American involvement in Southeast Asia, and in its wake, the tragic squandering of scientific and human resources in this



Speaker Bear at Podium. From l. to r.: Miss Murray, Mr. Masters, Dr. Seidl, Mr. Simpson, Dr. McDermott, Dr. Compeau, and Moderator, John R. Brooks '43B.

country, has led many students either into the social-scientific inquiry of behavior itself or into personally defined, emotionally concrete and immediate, life pursuits. The existence of active mass murder overseas, and the passive, neglectful starvation and medical privation of millions at home, can turn one's mind from condensing enzymes in the beef heart.

If this is overly polemical, much of it is clearly self-directed, as my interests, though behavioral, lie dangerously near the basic medical sciences. What is troubling to many quadrangle scientists and clinicians, some of whom were architects of the new curricular freedom, is the prospect that students will use their independence not to deepen understanding along hallowed, faculty sanctioned lines of the Flexner era but, in part, to explore the semisoft disciplines at the interface of scientific medicine and society. From this student's perspective, it is an inevitable consequence of offering in good faith freedom that choices may be made which were unforeseen and, a priori, appear undesirable. The right to choose is the right to err; but here, more basically, extending the freedom of choice means abrogating the right of authoritarian judgment. In the pluralistic interchange which results, each party yields any innate claims to a preferred value system. Translation: when faculty and students dispute

priorities, do not term the students' view an error.

I sincerely hope that faculty and alumni will accept the consequences of student priorities. These intellectual preferences are notoriously fluctuant, and in a concerted attack on the broader social dimension of "dis-ease," a basic scientific armamentarium, augmented by economics, social psychology, and anthropology, will likely prove essential. What I should like to caution strongly against are premature rearguard actions, wherever originated, to compel student submersion in either proscribed basic sciences or clinical specialties. However evasively conceived (i.e., the recent faculty proposal requiring performance on clinical specialties of Part II of the National Board exam), these moves will be stoutly opposed and will prove counterproductive to furthering that essential "basic trust."

Modifications in the last four years have, primarily through curricular changes, placed greater confidence in, and left greater responsibility on the student for determining his individual education. Students have, at the same time, become integrally involved in daily operations and planning for Harvard Medical School through their election to virtually every faculty committee and advisory board. Students functioned on the Admissions Committee this year as both inter-

viewers and full voting members; they have voting positions on vital Curriculum and Promotions Committees; and we anticipate that two advisory students will sit on the Administrative Board. Pluralism, in this political sense, amounts to a radical redistribution of authority; in particular, the paternalistic notion of student input to a benevolent faculty has been replaced by the viable concept of student voting representation.

Alfred North Whitehead, in an argument with Bertrand Russell during the writing of *Principia Mathematica*, divided the world into muddleheaded and simple-minded people; he was one of the former while Russell was acidly thrust into the latter category. Those of you

who have made it through these tortured, convoluted, subordinate-clause laden pages will have no trouble locating me. As a final sop to obscurity, let me suggest, by way of a cybernetic analogy, that the partial direction of a university by its students, both in individual and institutional senses, represents a fundamental advance in the power of social negative feedback to modify the educational process. Uncontrolled feedback in physical systems quickly leads to oscillation. But there are far happier solutions demonstrated in the biological world — homeostasis in a single response system with relatively short time constant, and, in the limit, the much more complex and powerful process of adaptive evolution.

direction. Students are active on most of the existing committees, and a joint Governance Committee, under the chairmanship of Dr. Albert Coons, has been exploring mechanisms for improving the administrative organization of the school. With this increased participation of the student body has come the predictable realization that committee work in a participatory democracy is always time-consuming, frequently soporific, and rarely characterized by prompt, effective action. The search for the seat of power in smoke-filled rooms represents a rather fruitless journey after an elusive and probably non-existent Grail. Student impact has been stimulating, energetic and productive, however, and, if not discouraged, will be a force in the coming decade of the Medical School's progress.

Dissatisfaction with the present social system has involved the Medical School as well as other segments of the University. The validity of the questions is clear. There are gross defects in our health care system and nowhere is this more apparent than in the municipal hospitals. Squeezed between the justifiable demands of a significant segment of our population for decent and dignified medical care and the increasing insolvency of our municipal governments, the city hospitals and their health programs will require a broader base of support, and direct, rational help from the federal government. The student body has been intensely interested and involved. The surge of humanism and a strong interest in primary health care, in contrast to the apparently detached atmosphere of molecular biology, have carried the risk of the heart ruling the head. Incompetence is the greatest inhumanity to man and any decrease in the traditional focus on excellence will not help to improve what has been so often described as a creaking and archaic system.

As for the next five years — as the newly crowned Sultan commented as he inspected the harem — "There is certainly a lot to be done, but it's hard to know where to begin."

A FACULTY MEMBER'S VIEW

by William V. McDERMOTT 42

ISSUES and problems at the Harvard Medical School during the past five years have involved curricular change, the governance of the school, and the demands for social change.

For the past 15 years, a period which represented the birth and demise of four committees, Harvard Medical School struggled with the problems of introducing major change and flexibility into a long-established and rather rigid curriculum. For many years, the old Vermont story — "If I were going there, I wouldn't start from here" — seemed particularly appropriate. Finally, under the leadership of Dr. Alexander Leaf, a compressed core curriculum was defined and an elective period of approximately two years was made available. Surprisingly, little actual change occurred. In general, students selected clerkships and clinical courses in such a way that many of the programs bore a striking resemblance to the pattern of the requirements of the old curriculum. Without specific organization and direction beyond the use of curricu-

lar advisors, the approach of students often resembled that of the little girl in the progressive school who asked "Do we have to do what we want to do today?" Elective courses were selected without relationship to any disciplined plan of study, and were usually clinical in nature. Relatively few basic science electives were taken. With this experience, an effort is in progress to require a more organized and disciplined intellectual approach in the Elective Period. Areas of concentration with clusters of related courses are planned with certain basic sciences and disciplinary approaches required. How effective this swing of the pendulum will be, remains for the future to demonstrate.

Revision of the governance of the University and its various faculties, with increased student participation, has been a theme of the past few years. At the Medical School, the Student-Faculty Committee has been conscientious and effective in expressing student concerns and developing changes in attitudes and in

June 5 brought Class Day to the Quadrangle of Harvard Medical School amidst glorious clouds and powder blue skies. The proceedings went as per usual with one addition. David Spiegel read a statement explaining why he and nine other members of the class of 1971 are filing claims as conscientious objectors. Portions of the statement are excerpted below:

We have made this choice not merely as a protest against the War but because each of us felt that placing ourselves in the service of the United States Army is inconsistent with our respect for human life. . . .

We have risen to take oaths here today as solemn pledges of our commitment to medicine. To allow the military to use us for its admittedly violent and political ends is in conflict with both the Hippocratic Oath and the Declaration of Geneva, which states:

"I will not permit considerations of religion, race party politics, or social standing to intervene between my duty and my patient . . . even under threat, I will not use my medical knowledge contrary to the laws of humanity."

If there is any meaning to the laws of humanity then what we see in this war certainly violates them. . . .

We pledge that we will struggle for peace as firmly as we refuse to serve war. We believe that wars will cease when men refuse to fight.

A response to the statement above was made by class president Robert W. Beart who pointed out to the audience that many members of the Class believe that the very essence of the Declaration of Geneva is that regardless of political feelings or affiliations "we cannot deny our talents or abilities to any segment of the population and this includes those in Vietnam. To do so is a violation of our oath."

Eight members of the 182nd class to graduate from HMS received honor awards at Class Day for their work during the past four years of study. The Richard C. Cabot Prize on medical education or medical history was given to **Barbara A. D. Gilchrest** for her paper entitled, "A Computer Teaching Program in Hemostasis." **Howard B. Waitzkin** was awarded the Rose Seegal Award on the relationship of the medical profession to the community for his paper titled, "The Communication of Information About Illness: Clinical, Sociological, and Methodological Considerations." The James Tolbert Shipley Prize was presented to **Bruce M. Smith** for his paper entitled, "Disruption of the Human Gastric Mucosal Barrier by Acetylsalicylic Acid and Ethanol" which has been accepted for publication in the *New England Journal of Medicine*. **Lawrence J. Eron** was awarded the Leon Resnick Memorial Prize for excellence in research for his paper, "Transcription of the Lac

Dr. Beart



Operon of Escherichia Coli." The Henry Asbury Christian Award for diligence and scholarship in research was given to **Robert C. Bast, Jr.** for his paper entitled, "Heterogeneity of the Cellular Immune Response." The Massachusetts Medical Society Award was presented to **Robert Guyton** for his paper titled, "Autonomic Control of Ventricular Performance in Normal and Cardiac Denervated Dogs." The Dean's Prize for scholastic excellence was awarded to **Janet G. Hickman**. In recognition of his all-round ability and well balanced personality, **Robert W. Beart, Jr.** was presented the Harvard Medical Alumni Association Award. **Roger A. Fleischman**, a first year student, was presented the Soma Weiss Award of the Harvard Medical Society for his paper titled, "In Vitro Analysis of the Host Range Restriction in *E. Coli*."

Four members of the Harvard School of Dental Medicine, Class of 1971, received awards and honor certificates. **John P. W. Kelly** was awarded the Harvard Dental Alumni Gold Medal "for all-round scholastic excellence," and was one of the three recipients of the Omicron Kappa Upsilon Certificates, given by the Harvard School of Dental Medicine's Gamma Gamma Chapter of the national dental honorary fraternity. **Elliot V. Feldbau** won the Harvard Dental Alumni Silver Medal "for all-round scholastic excellence," the Harvard Odontological Society Award "for the best student seminar," and was also one of the three recipients of the Omicron Kappa Upsilon Certificate. The Dr. Norman B. Nesbitt Medal for "excellence in the field of dentistry" was awarded to **Jonathan S. Jacobs**, who also received one of the three Omicron Kappa Upsilon Certificates. **F. Edward Gallagher** was presented with the Dr. Grace Milliken Award "for the outstanding paper in the field of dental health."

by DEAN ROBERT H. EBERT

It is my privilege to have the last word on this important day in your lives and to salute you on the completion of your education for the M. D. degree. You have enjoyed, or perhaps endured is a better word, a long and arduous university education, and are on the threshold of professional life. Let me underline the word professional because the least structured, but the most pervasive aspect of your medical school experience, has been professionalization. In a gradual, and often subtle way, you have been changed, perhaps more than you recognize. The process will now continue at an accelerated rate as you go your diverse ways into one or another of the specialties of medicine.

It may be profitable to pause, for a moment, to consider what it means to become a member of the medical profession. In recent years, it has become popular to criticize the health care system in this country. A significant number of critics have been housed at Harvard. The profession itself, as symbolized by the AMA, has been attacked for its conservative political stance. These are political commentaries and rarely does the attack extend to criticism of the very special privilege which society has bestowed upon the physician.

If you will reflect for a moment on the role of the physician, you will realize that he has been given awesome powers. He is free to probe the mind and body of any patient who comes to him in whatever depth he feels appropriate. He is permitted to make decisions that quite literally involve life and death, which may, from time to time, concern moral and ethical judgments. The physician is given license to perform surgical procedures and to use drugs that may have potent therapeutic effect, as well as dangerous side effects. Finally, he is privy to the most confidential information, even about



Dr. Ebert

heads of government, and entrusted with knowledge which could influence the state of nations. It is important to note that this great trust is not under attack, for by and large, physicians have followed their profession with honor and discretion. Indeed, this is the important part of professionalism.

With privilege goes responsibility. The basic purpose of the Hippocratic Oath, as well as the several oaths that more accurately reflect modern medicine, is to emphasize this responsibility. That, too, is a part of professionalism.

The message I leave with you is that true professionalism has an important purpose and you should carry your title, Doctor of Medicine, with both pride and humility. You have entered a profession based on great trust and obligation. I am certain each of you will honor that trust and fulfill your obligation to society in the years ahead.

THE MAKING OF A PHYSICIAN

by JAMES S. GOODWIN '71

WHEN I look at medical education in the U. S. today I begin to get paranoid thoughts about plots to thwart the American patient. My image of the ideal physician is someone who is competent, understanding, kind, possesses a great deal of common sense, and a sense of right and wrong.

Who does Harvard select to aspire to this ideal? Us. A bunch of overachieving men and women. We studied very hard to get into college; studied hard to get into medical school; and studied hard to get a good internship. We constantly work to affect an attitude of blase indifference or condescension toward hard work and competition. We work fourteen hours a day for the sheer joy of it.

In four years here, particularly in the past two years, we have all come closer to our ideals of being good doctors. I don't know how this came about.

At first we were all frightened of patients. To a lesser extent most of us still are. In our ignorance and fear we looked to others to provide us with examples of how to be physicians. We imitated the interns, residents, and attending physicians.

In some cases this was clearly a mistake; in others it was fairly humorous. I remember during my surgery rotation at the Brigham, my chief resident used the term "perfecto" about thirty times in an operation. Everything was "perfecto," "perfecto," "perfecto!" I noticed that the intern working with us be-

gan saying "perfecto" when he was operating. Luckily, I escaped before I caught it.

It was on this sour note that I had my third year depression. I thought that we had to learn by copying, and most of the doctors available to copy did not fit my image of the ideal physician. Many were good scientists. A few were good politicians. But good scientists are not always good doctors, and a physician's political activities, whether he is the head of the AMA or the Medical Committee for Human Rights, do not qualify him either as a teacher or practitioner. I went through a period of despair, thinking there was no salvation, no escape from the jaws of academic medicine.

Then came a change. It was a lucky combination of my own attitude becoming more receptive, and meeting some beautifully compassionate physicians. During rounds they spent at least half the time at the patients' bedsides. Those of us who worked with them learned how to put patients at ease and make them feel slightly less lost in the huge teaching hospitals. These are the people to whom we owe a great deal. They showed us that talking to patients is a viable activity.

All of us are grateful to certain teachers in the medical school. They showed us how to be proficient and become flesh and blood examples of our ideals.



Dr. Goodwin

We can't copy for very long without losing our own identities. Some goals are just physically unattainable. We move on, trying to attain our own goals. Before the fear of internships overtakes us, let us pause and thank those people who have helped us to this point.

My reason for raising these harsh issues on a day of celebration is that they will raise themselves tomorrow. We can no longer consider certain kinds of death as beyond our province. We must not specialize ourselves away from social disease.

It is said that the hottest places in hell are reserved for those who had the opportunity to act wisely and failed. I do not believe in hell, except perhaps in the sense of Sartre's statement that "Hell is other people." In that sense, we are in one of the warmer regions of the Inferno right now. We live in a slick, plastic, man-made hell, a hell where money can buy a longer life and its absence brings indignity; a hell in which it is patriotic to disrupt the nation's life for more money, but is treasonous to tie up traffic in the Capital for the sanctity of life; a hell where industry gouges and destroys the world around us and then sells it back to us in little plastic packages; a hell where we talk of peace and commit war.

In this kind of world doctors cannot and should not be neutral. John Donne said it this way: "Any man's death diminishes me, because I am involved in mankind." In my mind any man's failure to serve reflects upon me, any man's callous disregard hardens me, any man's killing stains my hands.

Not that neutrality does not have its appealing aspects. It implies that a doctor will treat anyone who is ill, regardless of his opinion of him or his social status. Let us never abandon this standard of practice. The idea of neutrality implies with it a certain passivity, a willingness to treat whatever comes, and not worry much about how the sick got there, why they got there, or who didn't get there. This is not a new problem. It is said that the Greek gentleman whose oath we take today saw all comers, with one hitch: His clinic office on the Island of Kos was located at the top of a hill. In general those patients who made it up to see him were discharged. This kind of unconscious selection has plagued medicine ever since.

Blood Cultures ON THE BLOOD CULTURE

by David Spiegel '71

It has been said that it is solely by risking life that freedom is obtained. We are entering a world today that has been cruel to many. We are entering it stronger than we were four years ago. We have added precious skills which give us an awesome power to intervene in people's lives. We have changed as people in these four years. We confront the world with our peculiar mixture of compassion, anger, dedication, and selfishness. We are giving up the shelter of medical school today, but this will not be the last safe hiding

place in our lives. We will be asked repeatedly to decide whether we will hide behind the mask of neutrality in difficult issues, or whether we will risk something to support what we believe. The only way to remain free in a world that is intimidating is to be willing to risk losses to bring what we do in line with what we believe.

When I discussed this talk with my classmates, several said that they agreed with many of the issues I raised, but did not feel that these problems should be discussed here.

On the level of patient care we must overcome our tendency to microscopic myopia to see and respect the patient connected to that glomerular basement membrane. We must be willing to risk losing "face" before him and other health workers, to admit we are wrong or ignorant, and to admit others can do some tasks as well or better than we can. This means offering the patient choices rather than orders. It means not always waiting for him to come to us, but risking rejection or hostility in reaching out to him. We may well have to risk time and inconvenience to change the patient's external as well as his internal environment. If we withdraw from problems like poor housing and racism, then we are admitting domination by those forces we believe are wrong. How can we hope for a patient to fight to change his life if we are not willing to fight with him?

We have all seen inadequacies as

well as strengths in the health institutions we worked in. It is not enough to observe with dismay crumbling ceilings, callous staff, unreliable laboratories, and impossible schedules of work. We must move together to change these institutions and risk dislike, poor grades, and sometimes hatred for doing it. We must relinquish enough of our comfortable shield of professionalism to enable us to learn, and take direction from the people whom we serve.

Overshadowing these problems of delivery of care is the national disgrace of delivery of death. In the time we have been in medical school there have been over 100,000 deaths and a million casualties in the War in Indochina. It is maddening to think that for every carefully placed suture we tied, and every thoughtfully selected course of drug therapy we administered, our government killed thousands of people. The Armed Forces are now spraying the



Dr. Spiegel

Asian populace with "pineapple bombs" which riddle bodies with plastic instead of metal. Plastic, you see, does not show up on X-rays so it cannot be easily found and removed. What kind of perverted mind could turn itself to this? How can we stand by and let it happen? We will not be and have not been thanked for trying to stop the War. We have been insulted, clubbed, and jailed. We must resolve to risk this and more, if necessary, to stop the killing. We do not have the right to a single drop of blood, a single inch of land in Asia. Our soldiers come home saddened, brutalized, frightened, and addicted. As human beings first, and as doctors second, we must act to stop it. The hell of that War is our world, and it warps us as surely as it destroys them.

It would be futile for me to call this world a hell if we were not capable of changing it. We are, and in our power to act lies the beauty and tragedy of our lives. We can make a difference if we dare, but our failure is measured not only in terms of the harm we did, but of the good we failed to do. Let us build together a world in which no man's health and freedom is bought with another man's blood and suffering.

Friends and family enjoy Class Day exercises.



THE UNWRITTEN LETTER

by EDGAR A. WAYBURN '30

A YEAR ago I stood in this quadrangle with my Harvard Medical School classmates of 1930 for the first reunion I had ever attended.

The Alumni Day speakers were from all generations; many were professors at HMS; and a few were medical students who felt strongly enough about certain things to get up and make themselves heard. I listened for over four hours to the various speeches, but as the afternoon wore on, I grew more and more appalled at what I was hearing. There were bitter complaints that the present Washington administration was not funding research programs adequately, especially the research programs of the particular speaker. There were a few well-meaning speeches defending the sanctity of good old-fashioned medicine. There were some impassioned and idealistic pleas against racism, for more involvement in social causes, and for ending the war in Vietnam.

What concerned me about the speeches was not their content. But what was missing, and glaringly so, was a frame of reference that acknowledged certain harsh realities. I felt that I was in a never-never land, or that Harvard Medical School was closed off from the rest of the world in a glass cage. For what I was hearing was time-honored rhetoric: the older men were defending certain traditions and the younger men were challenging them. It could have happened at my own graduation in 1930. The frightening fact was that no single speaker in 1970 even hinted at the most burning issue of our time. There was not the briefest reference to the fact that our earth, man's home, man's only home, was terribly unhealthy and was slowly but surely degenerating. No one hinted that man's life-support system on this little planet

might be failing, and that man himself was causing the failure. No one mentioned that all of mankind was in grave peril; that his very survival was at stake.

It seemed that all these well intentioned speakers were unaware of the environmental crisis, or if they were aware of it, they did not really take it seriously. Or they persisted in thinking that man was somehow separate from earth's environment and did not need to be concerned.

I WANTED to get up and speak — or shout: "Harvard, Awake! Arise! Change! The world has changed, and you must change!" But, of course, I didn't. I had the helpless feeling that what I had to say was too much to put into those few words. So I thought I would write a letter and send it to the *Harvard Medical Alumni Bulletin*. When I got home, I got as far as the first rough draft, but then I got caught up in too many other things and I never finished that letter. I will finish it today, when it has perhaps even more meaning. For those harsh realities of 1970 are even harsher in 1971, and too much of medicine is continuing blithely to ignore them. You and your generation will have to face these realities, so I address this letter to you.

You, physicians who have chosen to care for people, to minister to their health and well-being, in effect, to devote your lives to the welfare of mankind, have a special responsibility.

To meet it you are going to have to go beyond the scientific medicine that you have learned at Harvard, although that is an invaluable tool. You are going to have to go beyond the research laboratory, the hospital, the doctor's office you may open,

and the sickbed itself. You are going to have to go into the world fully, and come to grips with the environmental crisis, for it is the single greatest threat to man's health, welfare, and survival.

This fact is becoming more and more obvious everywhere. The world we live in is full of poisons, and there are increasing numbers of lethal agents that are becoming concentrated and enmeshed in the web of life. Pesticides, or more properly biocides, have been broadcast throughout the food chain from the Arctic to the Antarctic, and there is now more DDT in mother's milk than the amount allowed in animal milk by the United States Food and Drug Administration. Deadly poisons such as dieldrin, lindane, and carbon tetrachloride are used in many households. The polychlorinated-biphenyls used in industry are permeating our air, land, and water. We have polluted every major river in the United States, and we are threatening to kill our oceans with garbage and atomic wastes.

In medicine, we are seeing a tremendous increase in diseases and deaths caused by this poisoning and polluting of the biosphere. Disease and death caused by air pollution are now commonplace. Smog, like war, is not healthy for children and other living things; but it may be a more insidious killer. It is known to aggravate asthma and chronic respiratory diseases such as emphysema and chronic bronchitis, to impair pulmonary function, to cause eye symptoms, and to damage important food plants as well as trees and flowers. More subtle effects of smog include the impairment of oxygen transport by the blood due to carbon monoxide, and interference with porphyrin metabolism due to lead. Further provocative research by Winkelstein and French suggests that death from other diseases, specifically, gastric cancer, may be directly linked to polluted air.

More deaths are caused by heavy metals, such as lead and mercury. In Japan, cadmium poisoning, a result of industrial pollution, is caus-

ing more and more incidence of the painful and fatal Itai-Itai — or Ouch-Ouch — disease for which there is no known cure.

We have increasing noise pollution; it is almost impossible to escape the sound of some mechanized vehicle anywhere on earth. There is an increase in hearing loss associated with the rise in noise level in areas around airports — not to mention around rock bands.

On another level, we are seeing perhaps even more frightening evidence of the effects of a deteriorating environment. There is an alarming increase in the number of people who attempt to escape reality, through drug use, through cults, and through suicide. There is the appalling disenchantment of many young people; apathy and the turned-off symptom that all too often approaches despair. There is violence, rage, hatred among peoples, and an upsurge in diseases caused by stress. These are symptoms which occur in overcrowded populations of other species of animals.

As physicians, dedicated to improving the health and welfare of man, we cannot close our eyes to these harsh realities. We must acknowledge the fact that our poisoned, polluted, and overcrowded environment is a vast vector for disease-conditions which may be fatal to mankind. Medicine, if it is to save human lives, must achieve a new dimension; it must become involved in the broader problem of the causes and cures of our critical environmental dilemma.

Unfortunately, I know of no medical schools offering courses in how to attack this enormous problem. Today I have a few suggestions; they boil down to the three words I did not shout at last year's Harvard Medical reunion. I say them to you now; Awake! Arise! Change!

FIRST of all, you must awaken. You must be fully aware of the enormity of the problem facing you, and of what is behind it. You must under-

stand what is causing the present environmental crisis. There are certain fundamental natural laws which govern the life-support system of our planet, and they are not always taught in school. These laws regulate a healthy biosphere and all the complexity of life that occupies the biosphere, ourselves included. They control the delicate balance between all life forms, including human beings. If these laws are broken, life may be destroyed.



We have been breaking many of these laws for centuries. We got away with it when there were fewer of us in fewer places, and when we were not as smart as we are today. Now, with our great proficiency in scientific technology, with more and more people, with more and more demands for affluence, we are breaking these laws all over the world on a scale inconceivable a few years ago. For example, we are pouring out smog not only in Boston, New York, Atlanta, Chicago, San Francisco, Los Angeles, Portland, and Seattle, but also in Tokyo, Madrid, Paris, and Mexico City. We are not only killing Lake Erie in the United States, but Lake Constance in Switz-

erland, and Lake Baikal in Russia. We are cutting every tree we can lay our hands on — our last virgin redwoods, the forests of the tropics, of South America, and of Alaska. Forests, incidentally, are the most efficient areas on earth for synthesizing the sun's energy, and all of life, including ours, runs on that energy. In this context, it is not only venal to cut 2,000-year-old redwoods for match boxes, coffins, patio furniture and fence posts, it is rank folly. It is not only immoral to defoliate the forests of Vietnam, it is suicidal.

You must be aware of much more. You must recognize that medicine itself has ignored many natural laws. For example, in achieving a measure of death control, one of our greatest triumphs, but without attendant birth control, we have helped overpopulate great areas of the earth. By achieving mass disease control, again a compassionate human goal, we have made it possible for many people to live longer lives, but often in abject hunger, misery, rage, and despair. The earth has a limited carrying capacity, and good medicine is helping to overload it without recognizing our obligation to alleviate the suffering this causes.

On a different level, medicine is tampering with man's evolutionary process. By making it possible for the genetically unfit to propagate, we are challenging the law of the survival of the fittest. This may have serious implications for the future of man. In Kingsley Davis's words, we are shoving the human species further and further out on an evolutionary limb.

FINALLY, you must be aware that you are not Gods. Doctors who deal with life and death sometimes tend to think of themselves as such. But doctors, like everybody else, are people. Smart people, we hope, and well trained, but still people. All people belong to the earth; the earth does not belong to us; the earth and the rest of its creatures are not our chattel. As we physicians affirm

the dignity of people, we must affirm the dignity of all life, for we are linked inseparably to the rest of life on this planet; that is one of the great natural laws. We must respect the earth and revere it. As we destroy it and its creatures, we destroy ourselves.

I come to my second charge to you; Arise! Become involved in rescuing the human environment, in restoring quality and beauty to human lives. You are right to be concerned with conditions in our ghettos. Our cities are sick; we are crowding too many people into them. Our young people are rightly disenchanted with the dreary "plastic" world around them and the destruction of natural things. To be whole and healthy, human beings must have a decent world to live in. You, as doctors, must help us to have that world.

Arise, and re-examine the role of medicine in our society, recognizing that it is not a separate entity, but that it must be a part of the mainstream. Re-examine your goals and values outside of medicine, the priorities of our society. Our ideals of unlimited "growth" and "progress," for instance, may have served other generations well, but we can no longer afford them. In the closed system of the biosphere, the open-ended growth of anything, populations, products, development, can lead only to disaster. We can no longer afford rampant technology and the destruction of our limited natural resources. We cannot keep on building bigger and faster airplanes just because we think we know how; they threaten the health, the peace, and the almost forgotten balm of silence to which all people are entitled.

Awake, arise, and change. These are all essential, but perhaps change is the most essential of all. All of us are going to have to change the way we live. We have become accustomed to more than we need, to more than is good for us, to far more than our environment can provide or afford. Our waste alone, our garbage, totals millions of tons a year. We are already running out of



"In wildness is the preservation of the world."

places to put it, and we have to keep shifting it around. Many of you already recognize the need for a simpler, healthier existence, with less emphasis on the material, and more emphasis on the spiritual. You can be the agents of change in bringing this about in all of our society.

YOU can and must be the agents of change in medicine. For medicine, too, must re-examine its goals and its values. Medicine must recognize its critically important role in ecology. It must become a broad factor in human survival by enlarging its concepts to include public health on the wide, long-term scale. Medicine must move beyond single-minded consideration of the individual patient as its only objective, to a consideration of humanity as a whole. We must concentrate on human health rather than on sickness alone. We need to explore the environmental factors involved in specific diseases. We may well get more from our health dollars if we put them into research on the ecosystems which affect man, and all ultimately do. Study of the effects of human crowding, mass air pollution, overurbanization, represent legitimate medical investigation of a kind that

is long overdue. Finally, medicine must become involved in restoring the quality of human life as well as maintaining its quantity, in understanding the ecological factors which so threaten decent human existence — and indeed all existence on this little green planet that is our home.

As you bring about these changes, I ask you to do so with all your capacities, your intellect and intelligence, all your medical training and skill, your dedication, idealism, energy, and courage. We desperately need you and all your capabilities.

Reject the pathway of hatred. It is easy in this troubled world to become polarized, to paste labels on people, to blame one group or another. This is the antithesis of the medical ethic; it is our charge to care for all people. Each of us is as guilty as the next. We are all in this together. We are all people who, in the long run, breathe the same air, use the same water, share the same home.

In closing this letter, now finally written, I must note that the hour is very late. We are being sucked into the maelstrom with frightening speed. As an incurable optimist, I still have great hope. My own children, who are young adults, are my hope. You are my hope; indeed, you are the hope of mankind.

THE WILLIAM O. MOSELEY, JR.

TRAVELLING FELLOWSHIPS

THE BEQUEST OF JULIA M. MOSELEY MAKES AVAILABLE FELLOWSHIP FUNDS FOR GRADUATES
OF THE HARVARD MEDICAL SCHOOL FOR POSTDOCTORAL STUDY IN EUROPE.

The Committee on Fellowships in the Medical School has voted that the amounts awarded for stipend and travelling expenses will be determined by the specific needs of the individual.

In considering candidates for the Moseley Travelling Fellowships, the Committee will give preference to those Harvard Medical School graduates who have—

1. **Already demonstrated their ability to make original contributions to knowledge.**
2. **Planned a program of study which in the Committee's opinion will contribute significantly to their development as teachers and scholars.**
3. **Clearly plan to devote themselves to careers in academic medicine and the medical sciences.**

Individuals who have already attained Faculty rank at Harvard or elsewhere will not ordinarily be considered eligible for these awards.

There is no specific due date for the receipt of applications or for the beginning date of Awards except that the Committee requests that applications not be submitted more than 18 months in advance of the requested beginning date. The Committee will meet once a year in January to review all applications on file. Applicants will be notified of the decision of the Committee by January 31. The Committee may request candidates to present themselves for personal interviews.

Application forms may be obtained from, and completed applications should be returned to:

SECRETARY, COMMITTEE ON FELLOWSHIPS IN THE MEDICAL SCHOOL
HARVARD MEDICAL SCHOOL
25 SHATTUCK STREET, BOSTON, MASSACHUSETTS 02115



1921 WILLIAM B. CASTLE

HMS '21 celebrated its Golden Anniversary enjoying the Alumni Day and Class Day exercises in glorious weather. Thirty-one of 55 surviving members of our original 105 graduates were on hand for the dinner on Friday night at the Harvard Club. Twenty members were accompanied by their wives. We stood for a moment of silence while we thought of those classmates who are no longer living; and we toasted the health of the Twenty-fifth Year Class in the champagne traditionally presented by them to their quarter century predecessors. Our guests of honor were Dean and Mrs. Ebert.

After dinner seven of our classmates, selected by the Reunion Committee, spoke briefly about their personal records of the passage of time since graduation or of their philosophy of life. Byers, Fremont-Smith, Kennedy, Meade, Sutton, Whitehorn, and Young were introduced individually by Castle, serving as toastmaster. Appreciation was expressed to Blumgart for his fine work as editor of the Fiftieth Reunion Report. Thereafter, Dean Ebert spoke briefly of the common strivings of alumni and students for betterment and of the essentiality of change.

On Saturday the class assembled for a buffet luncheon in the beautiful sunlit gardens of the Kazanjian home in Belmont. There we enjoyed again the same delightful hospitality that on five previous occasions at five year intervals had been the great privilege of the class. Our honorary member, Dorothy Murphy, was there with us. Afterwards we watched movies taken by Dr. Kazanjian of classmates and wives departing themselves at previous reunions. And then, alas, our glorious Fiftieth was over.



Class of 1921

1926 TRYGVE GUNDERSEN

The 45th reunion for the Class of 1926 was a never-to-be-forgotten occasion. Of 83 living members, 29 appeared, most of whom brought their wives. Ruth Spence, Billy Potts' sister came all the way from Dallas, and we were all delighted to have Dorice Barr with us as a special guest.

It was heartening to see how many members were still in active practice or still engaged in research and teaching. The many accomplishments of the members of our illustrious class are too well known to require recitation here.

Following the all-day exercises in the Quadrangle, which valiantly attempted to bridge the generation gap, we travelled by bus by the most circuitous route possible to Holyoke Center in Cambridge where a delightful dinner was served. We were graced with the presence of Dorothy Murphy, whom we all love.

The sun's only rival, Langdon Parsons, known to us only as Mazda,

illuminated the evening with sparkling brilliance. It was a signal honor to have him with us.

Following the Class Day exercises, the entire entourage boarded a bus at the Children's Inn and motored to Manchester-by-the-Sea where we were guests of Walter and Kay Burtage at their lovely home, Kettle-drum on Coolidge Point.

A clambake is a New England institution, but never has one been more thoroughly enjoyed under more ideal conditions — brilliant sunshine, sparkling sea, old friends.

Here's to the 50th. Skaal!

1931 GEORGE P. STURGIS

The Class of 1931 registered 49 strong, most of them on Friday morning so the Alumni Day exercises were generally well attended and the consensus was that the program was excellent and that the time was well spent. The following day we adopted a new classmate, Ben Castleman, Harvard 1927 and Yale Medical School 1931, now at the



M.G.H. and thus numbered 50.

Friday evening saw us at the Harvard Club for dinner. An excellent turnout of classmates, most of them with their wives — a total of 86 persons — enjoyed catching up with the activities of old friends and discussing the various ways of handling the future. After dinner four short movies provided the entertainment.

Saturday morning some of us attended the Class Day exercises and were greatly impressed by the sincerity of all the Class of 1971 speakers despite the great difference in the points of view expressed.

In the afternoon we were most fortunate to have our outing at the beautiful country home of Hap Kennard in Newton. To find an open meadow, magnificent old trees, and even a pond within 7½ miles of downtown Boston, was indeed an experience. Croquet, pitching a golf ball towards a bottle of champagne (the closest won the bottle) and attempts at playing catch with frisbees were the more active sports available. Most, however, just enjoyed being in the peace and quiet of the place. Hap conducted several walking tours in the woods. Pink lady slippers were of particular interest to our many photographers and a blue jay on her nest was most exciting for the bird lovers. However, of greatest interest to most was a huge mass of honey comb, estimated to weigh over 10 pounds, attached to a branch in an apple tree. Building where there was no protection, the workers and their queen were destroyed by the first frost last fall. Apparently even bees can succumb to psychoses in these troubled times.

The day and our reunion ended with a delicious traditional New England clambake and all agreed that our 40th reunion was the best ever, thanks especially to Hap for graciously providing such a perfect spot.

1936 HOWARD ULFELDER

The 35th reunion of the Class of 1936 will be remembered because of the unexpected high attendance and the spectacularly beautiful weather which graced the occasion. Forty-four members of the Class attended one or several of the functions, many of them with family including children. They came from as far as the Pacific Northwest; attendance from the Middle Atlantic States and the Midwest was almost routine.

Accommodations at the Sonesta Hotel were uniformly praised, and certainly the way they handled the dinner dance on Friday night, the high quality of the music, and the delicacy and flavor of the steaks left absolutely nothing to be desired. Fifty-three souls were present for this festivity.

Attendance of members of this Class at all of the proceedings Friday and Saturday was also unexpectedly high; the informal class meeting at the two lunches were therefore all the more enjoyable.

Saturday afternoon brought perfect weather for the clambake, which proved to be one of the best ever put on by Elmer Glass, a truly superb effort enjoyed in every detail by the 84 of us who attended. Special guests for the occasion were Dr. and Mrs. Allan Grafflin. He began his career as a teacher at the Medical School with the arrival of our Class on the scene, and looks so little different now that he aroused the envy of everyone.

All in all, it was a reunion to be remembered with unalloyed pleasure by all who participated.

1941 JOHN W. RAKER

The Thirtieth reunion of Harvard Medical School Class of 1941 was varied and enjoyable. A total of 41

members of the class returned to participate in part or all of the program: a great attendance!

Festivities began Thursday evening June 3rd with cocktails and dinner at the Rakers' home in Concord. No one seemed to have trouble following the direction map supplied, not even the bus driver who brought a contingent from the Sheraton-Plaza. An excellent dinner was served in the barn by the catering service from The Old Mill. The rustic setting was agreeable and the company delightful. The Class had numerous progeny present — some of those in medical school now or recently were invited guests. C. Langdon Parsons '27 was an honored guest whose stories are still inimitable. A few moments of serious business were tolerated when Culver insisted on making a treasurer's report.

On Friday the morning exercises and luncheon of Alumni Day were well attended. Dean Ebert's announcements of the campaign for The E. D. Churchill Professorship in Surgery at Harvard Medical School and of the scholarship in Dorothy Murphy's name were special pleasures to the class of 1941.

Friday afternoon and evening a large group of Harvard Medical School '41 found its way through traffic and by ferry to Martha's Vineyard. The Harborside Inn in Edgartown was largely taken over by the Class with families. Several members joined the reunion there. Two days of fine weather and pleasant living followed. The only formal agenda was the poster-size blow-up of the class picture of 34 years ago provided by Raker. The reunion finally ended on Sunday as each departed to his own area with resolve to come back again for the 35th. As one member was heard to say, "We may not have been organized but it sure was fun!"



Class of 1946

1946 A. S. Macmillan, Jr.

The anticipation of a pleasant reunion was uppermost in the minds of all on the return to HMS and it was just that.

Thursday we gathered for the traditional Harvard Club dinner. The W. B. Castles were to have been with us. Instead he was having his 50th. The George Thorns were only able to stay for the social hour. The head table guests included Dr. Mark Altschule, Mrs. Henry F. (Emily) Allen, wife of the chief of ophthalmology at the Infirmary graciously sitting in for Mrs. Oliver Cope; Dr. and Mrs. James M. Faulkner, Dr. F. Sargent Cheever, and Dr. Maxwell Finland. Dr. Ebert was accompanied by Nancy Braasch in Mrs. Ebert's stead. Dr. Oliver Cope; Dr. William McDermott; Dr. Charlie Davidson and Jeanne rounded out the list. Jim Donald, Class President introduced the featured speaker, Dr. Ebert. We then did the honors for the rest, most of whom made a few brief remarks. Dren Lowell was not to be outdone introducing the final speaker, each graduate's good friend, Dorothy Murphy. The formalities over, we adjourned for lively reminiscences of the days at Vanderbilt

Hall, "the time we . . .," on into the wee hours. Alexander, Apfelbach, Arnold, Atwood, Beal, Carothers, Caskey, Crawford, Dalrymple, Desautels, Finkenstaedt, Freymann, Fuzy, Goetz, Green, Groves, Hackel, Hamolsky, Hirsch, Hooper, Hurwitz, Keirns, Kohn, Lamont, Manly, McCormick, Miller, Moore, O'Brien, Osgood, Palladino, Radford, Regan, Rosoff, Royer, Scott, Sifneos, Sohler, Solomon, Van Metre, Waterman, Watkin, were all present.

Friday was a lovely day. The morning was given over to learned dissertations including one given by classmate Herb Ley. Luncheon was another and more varied get together with a host of familiar faces from alumni and faculty. A well-hidden surprise to Dorothy Murphy was the substantial fund set up in her name. Treasurer Lowell announced a generous gift of \$12,932.01 from the 25th year class to the Medical School. A varied student panel discussion followed.

That night we met at The Country Club as guests of Dr. Lang Parsons [better than "sponsored by" as I believe we paid the bill so we weren't free-loaders] who joined in the festivities. Reverie, dancing, noise, and fun. Again many went into the wee

hours. Averill, Corsa, Donovan, Haley, Pendleton, Perkins, Roger, Rowbotham, Saxon, Segnitz, Skinner, and Wilson [best dancer!] were present.

Saturday was probably the best of all, if there could be a best. Herb and Ginny Fisher graciously opened their lovely old home in Hingham to all the class for a lobsterbake. There was tennis, sailing, indoor swimming, but mostly we talked and ate and talked some more. Gradually, and all-too-soon, the crowd began to thin as the reunion came to a close. O'Rourke, Sax, and Young finished the list of returnees.

Even now thoughts turn to the 30th. Where will it be? Shall we meet at HMS? Who will come?

As every 25th year class must realize, the demands for health care seem unlimited. We must have the help of all concerned in bringing the ultimate in medical decision and treatment to the patient. Close cooperation between laymen, hospital, and physician is needed. We must, as physicians, remain cohesive.

1951 RICHARD Galdston

1951 was a very good year. Vintage. We came back from California, Oregon, Texas, and Newton Lower Falls trailing clouds of potential past, present, and future. In the gleaming elegance of green grass, gray buildings, white tents and HMS ways we gathered on Friday to hear the assembled speakers talk about many things of medicine and Harvard, and to honor that lovely, warm lady, Dorothy Murphy, who proved to be, inter alia, Harvard Medical School's most valuable property since they discovered ether!

That night we got together at the Sheraton-Plaza, which used to be the Copley, to drink, eat, dance and most of all, to talk and try in some way to catch up on all the events that had transpired in between then and now. Some things had changed. If all the hairs that had been lost from all the heads of the assembled men were laid end to end they would

reach from Tugo Circle to Scollay Square and back with enough left over to weave a hair shirt.

Other things had not changed. Murray Strober and Howard Yaffe are still the tallest men. Charlie Goodrich still can belt out a mean version of "Danny Boy." Norm Geschwind still has the best jokes, Ransom Arthur can swim faster. Jock Robey is stronger and Lou Krakauer can climb higher and Bob Oates can chortle better and all the wives are prettier than anyone . . . and so we drank and dined and danced the night away without benefit of air-conditioning to cool our feverish brows, or Jack Teterick's soaring moustache or Walt Haynes' drooping sideburns.

Saturday broke sunny and some lay slugabed, others returned to the Longwood Quadrangle for more of the same and then in the afternoon we found our way out to Annisquam. Jock and Alice Robey welcomed us to their lovely home overlooking the sea where there was food and drink, our own good company, and the leisure for talk and being together.

As the day drew to its end and the sun sank and the coffee grew cold it appeared that times do change. Fat cravats may replace skinny little bow ties. Delivery of medical services to the consumer may replace the care of the patient. But the pleasure of their company remains a constant joy for the class of 1951 and our regrets are extended to those of you who were unable to partake and we hope that you will join us next time around.

1956 Joel J. Alpert

For those who came (and there can always be more), it was almost the same. There were some changes. Basketball gave way to volleyball. Vanderbilt Hall gave way to the Peter Styvesant and the Emerson Inn in Rockport.

After greeting each other with "you look the same" we realized we were somewhat heavier but hopefully wiser. For those who had not been to Boston recently, the change

was remarkable and the view of the skyline from the Peter Styvesant was striking. Conversation covered both the past and recent events and, with an active bar, by Saturday, we were well in the past. Tom Hunt came from San Francisco. Dick O'Hara is our champion father. Malcolm Moss's son did have chickenpox (confirmed in consultation). It was fun and almost all will be at our 20th. Bring your slides!

1961 James Warram, Jr.

Half of our class gathered in Boston for the 10th reunion celebration. As one would expect, attendance was drawn for the most part from the East Coast. Nearly every interchange on Interstate 95, from Richmond, Virginia to Portland, Maine, was represented. Fortunately, for variety's sake, there were several who flew from other coasts with stories of conditions there; Darrell Bibler from Oregon, Dick Poe and Al Gazzaniza from California, and Mike Connell from New Orleans. Except for one maverick, the 20 percent of the class living in the great middle of America stayed home. Congratulations to Kent Johnston. His journey from Cleveland was not the longest, but apparently, it was the hardest.

After the Alumni Day activities, we were bussed to Castle Hill in

Ipswich for dinner, music, and a beautiful evening. Some of us have been moving through time in different directions, as well as at different speeds. More danced to the Charleston than to Rock, and the dance floor was crowded only when Swing was played.

Unlike Class Day ten years ago, we had fair weather. Tenley and Tudor Gardiner were our hosts for a lawn party at their new home in Brookline. It was a grand finish for the celebration.

To the half of the class that could not get off their seats to join us, we send greetings and a kick in the pants.

1966 Edwin H. Cassem

1966 seemed like yesterday. Most frequent comment on one another's appearance was that few seemed to have changed. Activities behind those unwrinkled brows are recorded in the red book, which makes fascinating reading.

The high spot of the weekend came with the lobsterbake in Dover, where host and hostess Carl and Bonnie Akins provided a beautiful setting for the 56 who appeared. The time seemed all too short to renew old memories, make new acquaintances, and discover the changes of five years.



NOTES ON Alumni Day

The final meeting of the Alumni Council took place on Thursday, June 3, followed, as usual, by Alumni Day on June 4. It was a meeting for tidying up the year's work in preparation for turning over the Association's management to new officers, to be confirmed by the Association on the following day, and a recycled council — Maxwell Finland '26, as president, John H. Talbot '28, as president-elect, James H. Jackson '43A, as vice president for a three year term, William Warren Babson '30, and Carl W. Walter '32, continuing as secretary and treasurer. Roman W. DeSanctis '55, of Boston, John V. Kirkland '42, of Birmingham, Alabama, and John W. Singleton '57 of Denver, had been already elected to the Council.

The purposes of the proposed amendments to the constitution, which were adopted at the annual meeting on Friday, were further discussed at the meeting of the Council. They provide, as noted in the March-April issue of *The Bulletin*, for an associate membership to include all students beginning the second year, all physicians who have held a Harvard Corporation appointment in the Medical School or at one of its affiliated hospitals for at least a year, "and anyone the Alumni Council deems worthy of such distinction by virtue of service to the school."

A benefit to be anticipated from this new category should be a strengthening of the relations between the school and its affiliated hospitals, since interns and residents not graduates of the school would thus become ipso facto, non-voting members of the Association. Amendments to By-Laws I and II provide for the selection by the appropriate nominating committee of at least two names for each office, the Council to make the final choice of

those to be submitted at the annual meeting. Nominees for councilors will be selected by an ingenious formula based on chronological pentads or demidecades, assuring that a certain percentage will eventually represent recently graduated classes, thus breaking down the traditional patriarchal system.

An increase in numbers of student scholarships to replace repayable loans as far and as soon as possible was approved by the council as a better method of providing financial aid than encouraging students to mortgage their future careers. Since many beneficiaries of these scholarships seem to have no knowledge of their source, many of them being contributed by the Alumni Association, some way of identifying their origin was urged.

At the Alumni Day annual meeting held under the marquee in the Quadrangle, on Friday, following the morning addresses published on the preceding pages, considerable gratification was expressed over the success of the still increasing Dorothy A. Murphy scholarship fund, now nearly large enough to endow two scholarships. Incidentally, Dorothy, an unofficial alma mater to generations of students, having retired as associate director of alumni relations, has assumed a new position. From an office in the Countway Library, she will bring alumni records up to date, as well as recording her own recollections of the changes that have been taking place in medical education at Harvard.

Further gifts were announced at the same meeting — that of the 25 year class, amounting to an impressive \$54,638; Harvard chairs to Lang Parsons for his devoted services as director of alumni relations, — from which position he resigned the first of the year, to devote full

time to his practice — and to Dorothy who also received a gold alumni medal. Mr. Pusey, who attended and addressed the meeting was presented with a very practical Cadillac living credit, enabling him to be transported with dignity from his new home in New York to his new office in that hamlet, so long as the credit lasts. Mrs. Pusey, who could not be present, received a gold bracelet with a Harvard Medical charm.

Even the retiring editor, through the graciousness of his staff, was honored with a bound set of the issues of the *Bulletin* for which he has been responsible.

The afternoon program was moderated by John Brooks '43B, for several years the previous editor of the *Bulletin*, and so Alumni Day reached its finish.

The Class Day program, on Saturday morning, for both medical and dental graduates was conducted by Robert W. Beart, Jr., permanent class president of 1971 and one of the undergraduate representatives on the editorial board of the *Bulletin*, who had carefully planned his honeymoon so as to preside at this last event. After timely remarks by James Goodwin and David Spiegel of the graduating class, honors were announced by the Dean of Students Gardella of the Medical School and Dean Goldhaber of the School of Dental Medicine. Edgar A. Wayburn '30, of San Francisco, delivered the main address of the morning on conservation of our natural resources. Dean Ebert pronounced a valediction, reading the Oath of Hippocrates and the Declaration of Geneva, to either of which the graduates were invited to subscribe, and an especially successful and friendly two day festival was brought to a close as all joined in singing the familiar first verse of Fair Harvard.

ALPHA AND OMEGA

All things, like the Greek alphabet, must have a beginning and an end, except space and time, and man, in his conceit, prides himself on having already pierced the onion skin of space. So far as time is concerned, we are often warned that it is later than we think.

In respect to the *Bulletin*, it may be hoped that its life will grow longer and that it will retain its usefulness under a succession of editors. The retiring one, having been initiated into the business on a number of academic publications, from high school on, and having served an early and long apprenticeship as associate editor of the *New England Journal of Medicine*, was given in 1927, when he was secretary of the Harvard Medical School Alumni Association, the challenging assignment of establishing a periodical to represent it.

This was the alpha of his association with the *Bulletin*: alpha, in addition to being the first letter in the Greek alphabet, standing also, according to Webster, for something that is first: a beginning. Philemon E. Truesdale of Fall River had succeeded Elliot P. Joslin as president of the Association in 1926, carrying into office with him in his sweeping victory over no competition, the prospective editor and Albert A. Hornor as treasurer.

It was these last two who were made responsible for the *Bulletin's* editorial and financial survival, and the shoestring on which it was started remained unbroken. Although lacking the glamor that has accrued to it in recent decades, the publication flourished. Volume I consisted of two issues, the first of which, appearing in March 1927, contained an encouraging message from President Lowell and reported on the progress of Vanderbilt Hall, then under construction. The second number appeared in June, ending the academic year. Volume II, covering the year from October 1927 to June 1928, consisted of

three issues, and Volume III, covering the period between November 1928 and June 1929, reached the incredible number of four issues.

Among the immortals who contributed to these volumes were Nathaniel W. Faxon, describing the new hospital that he was creating in Rochester, New York; Frederick C. Shattuck, writing on "The School of Industrial Hygiene;" Walter B. Cannon, who contributed "The History of the Physiology Department of the Harvard Medical School;" Elliott C. Cutler, recounting "A Decade of Progress in the Medical School Library;" Henry A. Christian, on "The Teaching of Medicine at the Peter Bent Brigham Hospital;" and Alan Gregg, relating his "Impressions of Iceland." Dr. Faxon, a robust nonagenarian, is the only one of this group now living. And so the *Bulletin* continued under a series of editors, each making his own contribution.

The current habitually retiring editor, having given up practice in 1947 to assume the editorship of the *New England Journal of Medicine*, continued the custom by retiring from the *Journal* 20 years later. These episodes being measured

in scores of years, he was then asked to wind up his editorial career where it had begun, by recycling his efforts with the *Bulletin* and ending what had become a sort of sentimental journey, an omega, defined by Webster in simple terms as "last" or "ending."

In the alpha days, producing the editorial section of the *Bulletin* was a one-man job, performed when time permitted. During the years leading up to the reappearance of the original editor, its publication has become a complicated process, requiring the ceaseless energy and vivid imagination of two full-time young women. Under such ministrations, it has grown into a profusely illustrated magazine, in competition with all other alumni bulletins, vying with them for the awards of merit bestowed by the American Alumni Council, many of which, modestly framed, adorn the walls of our office in Building A.

With great confidence in the future, the retiring editor, with no more than the usual festival rites, surrenders the *Bulletin* o'er to the capable hands of George S. Richardson, book review editor of the *New England Journal of Medicine*, who has been lurking in his temporary corner in Texas, waiting for the bell to ring for the next round.

ALONG THE PERIMETER

McCluskey NAMED WOLBACH PROFESSOR

Robert T. McCluskey, M.D., has been named the S. Burt Wolbach Professor of Pathology at Harvard Medical School. Simultaneously, he becomes pathologist-in-chief at Children's Hospital.

Dr. McCluskey comes to Harvard from the State University of New York at Buffalo where he was professor and chairman of the department of pathology. He received the M.D. degree in 1947 from New York University School of Medicine.

An experimental pathologist and immunopathologist, Dr. McClus-

key's research has focused on three major problems: the histogenesis and repair of elastic cartilage; the pathogenic mechanism in acute glomerulonephritis; and cellular responses in delayed hypersensitivity reactions.

In addition to the wealth of scientific achievement, Dr. McCluskey has served as an inspiration to his students. He has served on many government panels, among them the Pathology Study Sections and Immunology Study Sections of the National Institute of Health.

CHURCHILL FUND

BOGER Gift

During the morning exercises on Alumni Day, Dean Robert H. Ebert announced two important gifts to Harvard Medical School.

A professorship fund has been established to honor Edward D. Churchill '20, John Homans Professor of Surgery, emeritus, and former chief of general surgical services at Massachusetts General Hospital.

Dr. Churchill has served Harvard for more than 40 years and his pioneering contributions to surgery of the chest are world-renown. Generations of students and house officers remember him with affection and awe as a brilliant and influential teacher.

The Edward D. Churchill Professorship will be a chair in surgery at MGH. John W. Raker '41, assistant clinical professor of surgery, is chairman of the committee to raise the necessary funds to endow the professorship. The funding effort received its initial impetus through a gift of \$250,000 from the Surdna Foundation of New York.

Another gift of special significance has come to the School through the generosity of an alumnus of the Class of 1938. William P. Boger was instrumental in transferring the assets of the Fund for Research Therapeutics (\$70,000) to HMS. Income from this fund will be used to support clinical medical research.

HMS Faculty OK's INQUIRY COMMISSION

Following the lead of the Faculty of Arts and Sciences, the Committee on Governance of the Medical School has voted to establish the equivalent of an ombudsman to be called the Commission of Inquiry. The Committee's proposal was presented to the Faculty on May 27 and accepted unanimously.

The Commission of Inquiry will serve as a clearing house for inquiries, suggestions, or complaints brought to it by faculty, students, or employees of the Medical School and School of Dental Medicine.

Those elected to the Commission to serve as temporary members until a formal election is held in the fall are:

Faculty

A. Clifford Barger '43A, Robert Henry Pfeiffer Professor of Physiology, HMS.

Elizabeth R. Simons, Ph.D., Lecturer on Biological Chemistry, HMS

G. Earl Thompson, D.M.D., Clinical Professor of Operative Dentistry, HSDM.

Employees

Susan A. Grose, Senior Research Assistant, Department of Physiology, HMS

Ross Schubarth, Senior Electronics Technician, Department of Biological Chemistry, HMS

Students

James H. Doroshov '73

Thomas A. Ukena, M.D.-Ph.D. program

'72 PREFERS PRACTICE TO RESEARCH

The Class of 1972, whose members were the first beneficiaries and guinea pigs of the "core curriculum," is now nearing the three-quarter mark in its medical school experience. The Class will probably also be remembered as the group that pioneered a change in emphasis from research to social issues, won a pass-fail grading system for the new curriculum, and finished only third in Part I of the National Boards.

Under the present curriculum, the Class of '72 had the option of beginning clinical work in February of the second year. Over 70 of the original 127 students took this option, when approximately 50 students, plus 40 transfer students, entered the clinic in September of 1970. Clinical requirements consisted of Introduction to the Clinic, Medicine, Surgery, and a choice of three of seven clinical electives. Most of the Class is currently involved in clinical rotations and electives and hence is spread out in a minor diaspora over the medical facilities of Boston, if not over the rest of the medical world.

In an effort to sample student opinions and activities, questionnaires covering a variety of academic and curricular matters were sent to members of the Class. Despite a disappointing return (58

questionnaires), several trends were apparent.

Most students evidenced interest in pursuing further basic science or research work in addition to the core curriculum. Of the 58 students, 32 had spent at least one elective month in the basic sciences, and 32 stated an intention to spend more time in these areas before graduation. This left only 15 students who had spent the minimum of time in basic science and had no plans to do more. Clinical electives generally fared even better; 22 students planned to take all seven elective rotations, while most of the remaining 36 planned to omit only one or two blocks. In terms of individual courses, 18 students had no plans to take orthopedics, followed by 14 for radiology, eight for psychiatry, seven for dermatology-ophthalmology, and six each for neurology and obstetrics-gynecology. All of the students polled planned to take pediatrics.

The 58 students who replied showed wide agreement on issues relating to the new curriculum. Forty-seven felt that the curriculum provided adequate preparation for the clinic; eight disagreed, while three did not respond. Among comments offered on this question, many students noted that the class might not be as well primed as previ-

ous classes, but that the clinical instructors should allow for this and plan their teaching accordingly. Two students noted that "core" material is learned best in the clinical setting. One former member of the Class of '71, now completing the third year after a year of research, stated, "I have not been impressed by any difference (between the Classes of '71 and '72) in background of pathophysiology. In addition, the Class of '72 has a great deal of enthusiasm for learning."

Students were also asked which subjects in the core curriculum they thought needed to be expanded. Nineteen non-transfer students had no suggestions for expanding preclinical courses. The courses most often mentioned by others were the renal, respiratory, and endocrine-reproductive blocks, with several students noting the need for more pharmacology. Other courses cited as inadequate were growth and development, nervous system, heart and circulation, infectious disease, cell biology, gastro-intestinal system, and gross anatomy. Two students thought that cell biology should be more integrated with the other material. Two other students proposed that an optional pathophysiology course be offered in the spring of the second year. Forty-one students opposed any expansion of the core curriculum to four semesters, while only eleven favored such a plan. Many of the "no" votes were followed by multiple exclamation points.

Many members of the Class listed involvement in extracurricular activities or positions. Nine are members of committees or editorial boards, while five hold teaching or advisory positions at Harvard College. Several students are working toward masters degrees in public health or public policy. Six students listed one or more published articles. Several students also mentioned plans to spend elective time in Europe, South America, and Africa.

In reply to questions about career plans, 36 students declared an intention to spend the majority of their

time in practice, including two in public health and one in health planning. Nine plan to spend most of their time in research and teaching, while eight favor some combination of practice and research. In terms of specific specialties, 16 students listed internal medicine as a possible or definite career choice; surgery was next with 13; family medicine, community medicine, and public health together accounted for eleven; pediatrics followed with five; psychiatry with four; and neurology with three. Two students planned careers in biological research, one in radiology, one in ophthalmology and six had "no idea."

The profile of the Class that emerges from this survey, partial as any impression based on 58 students must be, is clearly not revolutionary, as some have feared. Most

students intend to pursue both preclinical and clinical electives beyond the minimum requirements set by the new curriculum. This could serve to offset the initial disadvantage many students had at the time of the National Boards. Most students are satisfied with the new curriculum and, despite recommendations for improvement of individual courses, most oppose any return to a traditional four-semester preclinical course.

Changing times have had their impact on career choices; the strong sentiment in favor of practice rather than research, coupled with a new interest in family medicine, community medicine, and public health, marks a definite change from the previous "biological" era.

HOWARD S. KIRSHNER

Pictured below (r. to l.) are Warren E. C. Wacker, M.D., new Henry K. Oliver Professor of Hygiene, and two of his living predecessors; Dana L. Farnsworth '33 and Arlie V. Bock '15. Former holders of the Professorship, which was established in 1920, were Alfred Worcester '83, and Roger I. Lee '05.



PROMOTIONS AND APPOINTMENTS

PROFESSOR

Everett Anderson: anatomy
Ronald A. Arky: medicine at Mt. Auburn Hospital
William H. Berenberg: pediatrics at The Children's Hospital
William F. Bernhard: surgery at TCH
John D. Biggers: physiology
Richard B. Cohen: pathology at Beth Israel Hospital
Aaron J. Gissen: anesthesia at Massachusetts Eye and Ear Infirmary
John E. Hall: orthopedic surgery at TCH
Thomas C. Jones: comparative pathology at New England Regional Primate Research Center
William A. Meissner: pathology at New England Deaconess Hospital
Harry Z. Mellins: radiology
Betty G. Uzman: pathology
Arnold N. Weinberg '56: medicine at Cambridge Hospital

clinical professor

Mark D. Altschule '33: medicine

ASSOCIATE PROFESSOR

Menelaos A. Aliapoulos: surgery at CH
Joseph B. Alpers: biological chemistry at TCH
Isidore Altman: biostatistics in department of preventive medicine at Center for Community Health and Medical Care
Barry G. W. Arnason: Neurology at Massachusetts General Hospital
Thomas W. Botsford '35: surgery at Peter Bent Brigham Hospital
Mario R. Capecchi: biological chemistry
David M. Dawson: neurology at PBBH
John Gergely: biological chemistry
Alfred L. Goldberg: physiology
Norman K. Hollenberg: radiology
Robert L. Jungas: biological chemistry
Arthur A. Like: pathology
Antonia V. Lorenzo: pharmacology in the department of neurology
Susan Lowey: biological chemistry
Edward S. Reynolds: pathology
James F. Riordan: biological chemistry
Robert S. Weiss: sociology in the department of psychiatry
Kenneth A. Woeber: medicine
Nicholas T. Zervas: neurosurgery
Johan Zwaan: anatomy

ASSOCIATE clinical professor

Lester Grinspoon '55: psychiatry
William H. Timberlake: neurology

ASSISTANT PROFESSOR

Israel F. Abroms: neurology at TCH
Reinier Beeuwkes: physiology
Edna M. Bradbury: Dental auxiliary utilization and training in the SDM
John M. R. Bruner '49: anesthesia at MGH
Louis R. Caplan: neurology at BIH
James R. Cassady '63: radiation therapy
Leonard Corman: oral diagnosis in the SDM
David J. Cullen: anesthesia at MGH
Hillary F. Don: anesthesia at PBBH
Robert L. Ehrmann: pathology at Boston Hospital for Women
Kenneth H. Falchuk '66: medicine
Joseph M. S. F. Flanagan: medicine
Kenneth H. Gabbay: pediatrics
Ronald J. Gibbons: oral biology and pathophysiology
Dennis C. Gould: biological chemistry
Frederick G. Guggenheim: psychiatry at MGH
Zach W. Hall: neurobiology
Phillips Hallowell '43B: anesthesia at MGH
Peter G. Herman: radiology at PBBH
Gary Jacobson: psychiatry at MGH
Brian W. A. Leeming: radiology at BIH
Francis J. Manasek: anatomy
Robert J. McLaughlin: biomathematics in the department of medicine
Roger H. Morris '57: anesthesia at MGH
Gerald Nash '63: pathology at MGH
Johanna F. Perlmutter: obstetrics and gynecology at BIH
Daniel M. Philbin: anesthesia at MGH
Kurt Randerath: biological chemistry in the department of medicine
Liane Reif-Lehrer: biochemical ophthalmology
Robert G. Rosenberg: pediatrics at TCH
Robert C. Rustigan: microbiology in the SDM
William C. Schoene: pathology at PBBH
Victor E. Shashoua: biological chemistry
Arthur T. Skarin: medicine at Children's Cancer Research Foundation
Marshall Strome: otolaryngology at BIH
Elizabeth Taber-Pierce: anatomy
Melvin Tefft: radiation therapy at MGH
Stephen L. Washburn: psychiatry at MGH
Barbara E. Waud: anesthesia at PBBH
Nancy Waxler: psychology in the department of psychiatry

ASSISTANT clinical professor

Bernard L. Busfield, Jr. '57: psychiatry
Pattison Esmiol '58: psychiatry
Robert W. Fasciano: periodontology
Edward W. Friedman '45: surgery
Ralph J. Kahana: psychiatry
Paul J. Kalis: periodontology
Sidney Levin: psychiatry
Edward M. Mahoney '50: surgery
Edward M. Morin: orthodontics
Edmund C. Payne: psychiatry
Robert H. Resnick: medicine
Sigmund S. Socransky: periodontology
Donald Wexler: psychiatry

principal associate

Marijke E. Holtrop: orthopedic surgery (anatomy)
Calvin A. Saravis: surgery (biochemistry)

Robert J. Scheuplein: dermatology
Jerome M. Seyer: orthopedic surgery (biochemistry)
Bhagwan T. Shahani: neurology
Richard H. Underwood: medicine (biochemistry)

principal RESEARCH ASSOCIATE

Montserrat de Miguel Fencí: biological chemistry
Gerard C. Kress, Jr.: dentistry (educational psychology)

clinical ASSOCIATE

Theodore C. Barton: obstetrics and gynecology
Sumner D. Liebman '38: ophthalmology

LECTURER

Otto E. Aufranc '34: orthopedic surgery
Edward C. Dyer '39: pediatrics
Johannes A. Meienhofer: biological chemistry
D. Rao Sanadi: biological chemistry

DEPARTMENT of Physiology CELEBRATES CENTENNIAL

One of the nation's oldest departments of physiology, established at the Harvard Medical School in 1871, formally observed its centennial with a banquet at the American Academy of Arts and Sciences on June 3.

Present members of the Department and some of the more than 700 students, staff and doctoral candidates who have taught, studied, or worked in the Department, from across the United States, attended the banquet.

The teaching of physiology — the science which concerns the function of the living organism — has been a part of the curriculum of the Harvard Medical School since it was founded in 1782. Dr. John Warren, the first man appointed to the Faculty of Medicine (as Professor of Anatomy and Surgery) was the initial teacher of physiology.

Formal recognition of Physiology as a discipline came in 1847 with the establishment by the University of the Parkman Professorship in Anatomy and Physiology. The Chair was first held by Dr. Oliver Wendell Holmes from 1847 to 1871. Systematic laboratory teaching of Physiology as a university function began in the United States in 1871 when



Enjoying the centennial festivities from l. to r.: J. Hallowell Davis, Don W. Fawcett, McKeen Cattell, Elwood Henneman, and Thomas H. Wilson.

the discipline achieved Department status at Harvard.

Dr. Bowditch, who had received the M.D. degree from Harvard in 1868, served as Professor of Physiology from 1876 to 1903, and became the first Head of the Department of Physiology. At the time the Department of Physiology was founded, Dr. Bowditch, as Assistant

Professor of Physiology, became the first full-time member of a basic science department at the Medical School. He established, at the Medical School, the first true laboratory of experimental medicine in the United States.

Dr. Bowditch's successor to the leadership of the Department of Physiology was Dr. Walter Bradford



From l. to r.: Mrs. John Fairbank (the former Wilma Cannon), Dr. and Mrs. Bradford Cannon, and Dr. Philip Bard.

Cannon who served as the George Higginson Professor of Physiology from 1906 to 1942. Under Dr. Cannon's inspirational leadership the Department achieved intellectual greatness. More than 40 professors or their equivalent came from the Department's classrooms and laboratory during his tenure as the Head of the Department. At one time, it was estimated that one-half of all the professors of physiology, medicine, surgery or pharmacology, then serving academic institutions across

the nation, came from the Harvard Department. A leader in the understanding of the nervous system, Dr. Cannon's observations of the function of the sympatho-adrenal system led him to the formation of one of the great unifying concepts of biology — homeostasis — which recognizes the existence, within the living organism, of a fundamental condition of stability.

Dr. Eugene M. Landis, who became the George Higginson Professor of Physiology in 1943, succeeded Dr. Cannon as Head of the Department of Physiology and continued the high standards of his predecessors. Dr. Landis' leadership of the Department (he retired in 1967) was the last to span a lengthy period of time. Department leadership is now on a shorter term, rotating basis. Under Dr. Landis' leadership, the Department was divided into several professorial units involving specialty fields of Physiology. Dr. Landis' major research interest was that of capillary circulation. He was the first to develop successful techniques for the measurement of capillary blood pressure in animals and man. His teaching films, using methods perfected in his laboratory, involving capillary circulation, are held in high regard nationally. Dr. Landis is now the Adjunct Professor of Physiology



Dr. Landis

at Lehigh University.

Dr. David Hubel served for a brief time as Head of the Department of Physiology following Dr. Landis' retirement. He was succeeded by Dr. Thomas Wilson whose term as Head of the Department ended on June 30, 1971, at which time Dr. Elwood Henneman assumed direction of the Department.



Dr. Henneman (l.) chats with Dr. Davis.

The esteem in which the Department of Physiology at Harvard is held by those in the discipline, can be gleaned from two statistics, both relating to the American Physiology Society. Of the Society's 42 presidents, 15 have been members or former members of the Department. The highest honor accorded by the Society — the Bowditch Lecturer — was established 15 years ago. Of the 15 Lecturers chosen, 10 have come from those affiliated with the Harvard Department.

The 1971 Bowditch Lecturer will be Dr. J. Alan Herd, Associate Professor of Physiology at Harvard. Dr. Herd's lecture: "The Physiology of Strong Emotion: Cannon's Scientific Legacy Reexamined" will be presented at the annual meeting of the American Physiology Society in August.

See Sept-Oct Bulletin for an article on Dr. Cannon.

Following the morning ceremonies on Alumni Day, Perry J. Culver '41, director of alumni relations, announced the establishment of the Dorothy A. Murphy Scholarship Fund.

The scholarship honors its namesake who has served Harvard Medical School and the Alumni Association for more than half a century. Miss Murphy retired from her post as associate director of the Alumni Association on June 30.

More than 1400 members of the Harvard Medical Alumni Association contributed over \$100,000 to the Scholarship Fund and donations are still coming in. The Dorothy A. Murphy Fund is a permanent endowment fund, the income from which will be used for financial aid to students.



Dr. Culver congratulates DAM after announcement of the scholarship fund as F. Sargent Cheever '36 looks on.

TRIBUTE TO A GREAT LADY



Left, glasses are raised to toast Miss Murphy. Lower left, DAM is delighted with one of her many gifts, a scrapbook detailing her years at HMS.



**A surprise!
A thrill!!
A great tribute!!!**

That is the reason for this very special thank you to the thousands of my friends who so unhesitatingly gave over \$100,000 to the DAM Scholarship. I thank you for this great tribute, and for your friendship which I shall always cherish, but most of all, for believing me worthy of this signal honor.

I may retire, but because of you and your outstanding generosity, my name will be forever perpetuated at our Alma Mater — the Harvard Medical School — of which I was made

an Honorary Member in 1965

For the next few years, I will be bringing the Alumni Roll up to date in preparation for our 200th anniversary in 1982 and may be found among "The Rare Books" in the Countway Library.

I will always enjoy seeing and hearing from you for my friendship for each of you is undying, and like dear Harvard, will continue to grow and grow.

With love and affection, again I say thank you.

D.A.M.

PUSEY RECEIVES Liberty Bowl FROM FACULTY

The Faculty of Medicine presented President Nathan M. Pusey with a replica of the Paul Revere "Liberty Bowl" at the Faculty meeting on Wednesday, June 2. Dr. Robert H. Ebert, in presenting the gift to President Pusey, said, "Harvard has flourished under your leadership, and the Medical Faculty will long remember your interest and concern for their welfare."

The original Sons of Liberty Bowl commemorates the first unified stand for liberty and independence in the colonies. It was designed by Paul Revere in 1768 to commemorate the act of defiance by 92 members of the House of Representatives of the Massachusetts Bay Colony in voting not to rescind a circular letter which protested against the British Ministry and suggested a united stand in opposition of the Townsend Acts — a part of the old grievance of "taxation without representation."

The inscription on the original bowl read:

To the memory of the glorious
NINETY-TWO members of the
Hon'ble House of Representatives



of the Massachusetts Bay, who, undaunted by the insolent Menace of Villains in Power, from a strict regard to conscience, and the LIBERTIES of their constituents, on the 30th of June, 1768, voted NOT TO RESCIND.

"It occurred to some of us," remarked Dr. Ebert, "that it was particularly fitting to present this to you, since you have always taken a strong stand to preserve the liberties of the University, and particularly during the McCarthy Era you stood, . . . 'undaunted by the insolent menace of the villains in power.'"

CARNEGIE REPORT UNDER ATTACK: TERMED UNIMAGINATIVE

The Carnegie Commission Report of "Higher Education and the Nation's Health" was exposed to the critical view of three medical educators during a recent Harvard Medical Society meeting. Participants were Dr. Alexander Leaf, Jackson Professor of Clinical Medicine at Harvard and head of the department of medicine at the Massachusetts General Hospital; Bernard D. Davis '40, Adele Lehman Professor of Bacterial Physiology at HMS; and Lewis Thomas '37, professor and head of the department of pathology at Yale University School of Medicine and former member of the President's Science Advisory Committee.

The near total emphasis of the Carnegie Report on the need for the production of more physicians, said Dr. Leaf, is of concern to me.

"More doctors almost certainly are, and will be increasingly needed, but more physicians is no assurance in itself that health care delivery will improve. I perceive a major and most urgent role for the medical schools to do research and development on means to provide good



health care to communities as model experiments. From the experience so obtained, a better health care system can be designed and the actual needs for trained personnel derived. Then we will know how many physicians and other personnel we need to educate and for what functions they must be trained. The report unfortunately gives the impression that it provides a blueprint for curing the problems of health delivery when we do not really know what kind of a system or systems of health delivery can provide optimal care accessible to all our people."

Dr. Thomas criticized the report for failing to emphasize that it will be necessary to continue vigorous research on the still unconquered diseases, while at the same time remedying defects in the health care delivery system.

Dr. Davis was more sharply critical of the report, terming it a "Shallow collection of cliches, whose concern for increasing the numbers of physicians was not accompanied by an equal concern for their quality."

Though he did not denigrate the prominence given in the report to the need for increased involvement of medical schools in the problems of health care and health care delivery, Dr. Davis decried the lack of attention, "two paragraphs in 130 pages," devoted to the basic medical sciences, which, he noted, occupy almost half of the curriculum.

He pointed out that not one member or consultant of the Commission was a basic medical scientist. It did not seem to him appropriate to recommend extensive changes in the organization and teaching of the basic sciences without any input from teachers in these fields.

He accused the report of being responsible for setting up a sharp and unnecessary polarization in medical schools between those who work in the basic sciences and those who work in the area of health care. Dr. Davis charged that the report largely ignored the "fantastic successes" achieved in the biomedical sciences since the end of the second

World War, and said he believed that the recommended changes would impair the continuation of this progress.

Dr. Davis said he also felt that the report was not "very imagina-

tive" about problems that lie ahead. He noted, for example, that it failed to anticipate that "dental care will soon be recognized as equal to medical care as a right for the American people."

book REVIEWS

Paul Dudley White, My Life and Medicine: An Autobiographical Memoir by Paul D. White '11. 269 pages, illustrated. Boston: Gambit Incorporated, 1971. \$6.95.

We all know Paul Dudley White, probably Harvard Medical School's most distinguished living graduate. Many of us have been his patients at one time or another, like the writer of this review — included as a case in his *Hearts: Their Long Follow-Up*, written in 1967, and a grateful patient over a long period.

As its title suggests, Dr. White's autobiography, revealing in detail his character and personality, indicates how these qualities have contributed to the important part he has played in the development of cardiology as a major specialty. Through it all the author stands out as a devoted and remarkably industrious and effective physician — one who, versed in the science of medicine has, like a true practitioner, practiced it as a humanitarian art.

Dr. White was first directed toward cardiology fortuitously; in 1913 on his graduation from a medical internship at the Massachusetts General Hospital, he was offered and accepted a traveling fellowship to study with Thomas Lewis at the University College Hospital Medical School in London, with particular reference to the recently developed electrocardiograph. As a disciple of Lewis and James Mackenzie he became essentially their American counterpart, gradually convincing the profession of the increasing importance of degenerative heart disease.

The narrative continues, partly chronological, divided into decades; partly assigned to special subjects — his experiences in World War I; his studies of the two largest living mammals, including his excursions to California to obtain electrocardiograms of whales; his addiction to the bicycle and his efforts in establishing bicycle paths; his perennial travels to all quarters of the globe; the honors he has received on these travels; the friendships he has made and the patients of all degrees to whom he has ministered, including President Eisenhower, a chapter on whom is included.

His long and detailed working hours have been more or less divided equally among research, teaching, and his patients; he has seen some 15,000 in private practice alone. In 1949 he effected a momentous change in his activities without decreasing them in any way. In order to accept the executive directorship of the Advisory Council of the newly established National Heart Institute, he retired from that of the Cardiac Laboratory and clinics of the MGH, and the clinical professorship of medicine at Harvard, and opened a private office away from the hospital.

Scientific and clinical investigator, educator, world-wide ambassador in the cause of world peace, Paul White is most fondly known for his care of the patient. This review, written on June 6, 1971, his 85th birthday, the week after his medical class celebrated the 60th anniversary of its graduation, honors one of Harvard's uniquely distinguished alumni.

J. G.

